

Chemical Week

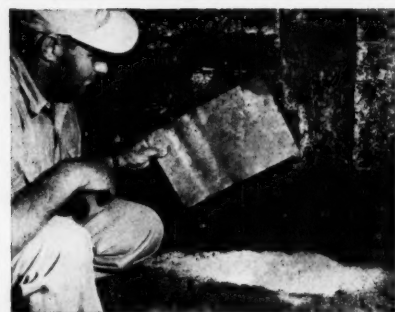
October 4, 1952

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- **Black with smoke, blue with imprecations; that's the air in Texas** p. 19

Problem: "practical" worries divert "pure" researchers; solution: move lab to country p. 29



- **Novel rodenticide hits commercial stride, bids for spot in expanded market** p. 45

Fourfold boost in four years; that's how cyanides soar with synthetic fiber boom . . . p. 55



- **ACS Marketing Division's Soderberg: He'll "sell" sales office to plant, lab men** p. 60

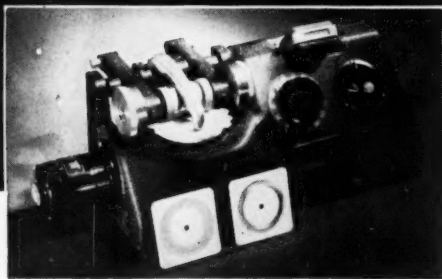
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Chemical Week

Volume 71 Number 14
October 4, 1952

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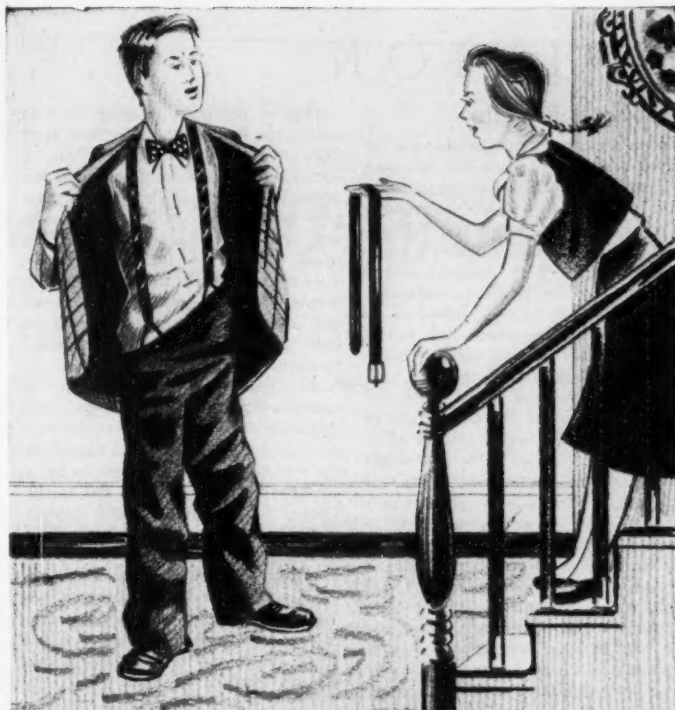


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OPINION

Setting It Straight

These prefatory remarks are, we believe, essential to place the following reader opinions in proper perspective:

1) The "Aid or Trade" editorial is a statement of McGraw-Hill Publishing Co., Inc., which outlines a problem facing all U. S. industry and is addressed to the business community as a whole. It was published in all McGraw-Hill magazines and should not, obviously, be regarded as being directed to any specific industry.

It delineated the crisis which impends—"the threat to effectiveness of U. S. leadership in the crucial effort to build the nations of the free world into a strong and unified group"—as a result of some trade restrictions now in force and efforts being made to raise such trade barriers.

No panacea was proposed; instead it said: "It must be recognized that certain U. S. industries and their capacity to maintain employment will be hurt by increased imports . . . It becomes critically important for the U. S. to formulate a national program to help these industries and communities take up the shock."

"There is no neat and simple prescription by which this can be done . . . Our ingenuity in developing new ideas to meet this crisis may well be a decisive factor in our effort to weld the free nations into a strong and durable alliance."

2) The ICI news story, to which Reader Lawrence also objects, was, as we pointed out, our reporting of interviews with both ICI's London executives and ICI's MacLean in New York, to determine how that company felt about the implications—made by the court in indicting ICI-Du Pont—that a mutual policy had obtained between the two: "you stay out of my backyard and I'll stay out of yours."

The ICI view: Tariffs, and tariffs alone, have been responsible for ICI's comparatively low sales volume in the U. S.

CW regards it as an obligation to report all significant news, claims it as its right to record the pro and con opinions of responsible chemical executives; but it should not be inferred that we necessarily agree with any or all opinions so expressed.

Correspondingly, we feel it is also our obligation to publish the thoughtful comments and criticisms of our readers.—Ed.

Free Trade Expoused

TO THE EDITOR: Reference to letter by Richard Kithil in CW, Sept. 13.

One of the most amazing facts to me is the longevity of certain fairy tales such as the well known "American goods produced by our labor enjoying high rates of pay cannot compete with goods made by labor who are paid one-sixth to one-third as much." Altho this may look reasonable to people who are accustomed to seeing only the surface gloss, chemists and engineers are expected to base their logic on more fundamental concepts.

A population consumes only as much as it produces unless it goes into debt. The U.S. today is certainly not in a debtor's position with regard to the rest of the world. American labor out-produces the rest of the world. That is the only reason that it is higher paid. If the American standard of living is six times that of another country, it can only be because American production per person is six times that of the other country. They cannot hope to compete with us on equal terms except only on items for which they are especially suited.

The amazing part is that the consuming public swallows the doctrine of "protective tariff." They're the ones who pay the tariff! If they don't pay it in the added price of foreign goods, they must pay equally in the cost of the American-made goods which are being "protected." If a country is ideally suited for production of an item because of abundant, high-grade raw material or of unusually skilled craftsmanship, I, as a consumer, want the opportunity to take advantage of the low cost of this product. It is only the selfish few who stand to profit from marginal operations on such a product in this country who seek to penalize the consumer with a tariff duty.

In 1930, when chlorophyll was little more than a chemical curiosity, the duty on it was 7½%. Today, when it is in such great demand that domestic production is pushed to keep up with it, the duty has just been raised to 12½%. And still the American consumer is being taxed to pay for products which are donated to foreign countries because they cannot raise the dollars to pay for them. What kind of logic is this? Soak the consumer; soak the taxpayer. We get it from both sides.

Rather than an elaborate system which entails increased government regulation and interference, such as that proposed by Mr. Kithil, I maintain that the only industry which is entitled to a tariff protection is one whose loss would seriously cripple our

defense capacity in case of a war time blockade. And with the numerous examples of our ingenuity in adaptation provided by the past wars, there must be extremely few of such essential industries that need protection.

WILLIAM G. CARTER
Terre Haute, Ind.

Sounding The Tocsin

TO THE EDITOR: . . . In view of the general language in your [company] editorial "Aid or Trade? A Crisis Ahead," my first reaction was one of interest and puzzlement. However, after reading in the same issue the report on your interview with Mr. Hugh MacLean, U. S. representative of Britain's chemical cartel, ICI, my reaction quickly changed to one of alarm. The report on the interview is, to say the least, misleading.

The editorial, while undoubtedly . . . a real attempt to be constructive . . . in theory sounds good . . . when applied to concrete situations falls through. The two together, appearing as they do in a magazine of influence and repute, could do much damage to the U. S. organic chemical industry.

It is not a bare question of aid or trade. Certainly continued aid is not the solution. Nor is trade . . . if we mean allowing England or any other country to sell in the U. S. products at a price with which, because of labor differentials, U. S. producers cannot compete. Particularly when these products are . . . essential to our defense.

. . . Over the period 1938-1951 when most countries . . . raised tariffs . . . made wide use of quotas, multiple exchange rates, import licenses and embargoes, the record of the U. S. stands almost alone.

In 1938 we imported \$2 billion worth of goods at an average equivalent ad valorem duty of 15.5%. In 1951 we imported \$11 billion of goods at average ad valorem rate of 5.6%. . . . Our imports increased more than five times . . . our duty dipped to a third. . . .

Re coal tar products there would seem to be three choices: (1) allow unrestricted imports without protection of any sort; (2) exclude imports altogether; (3) reach some medium where imports are possible but not destructive to [our] domestic industry . . . which is essential to our defense.

Labor costs in the U. S. organic chemical industry are four to six times greater than . . . in Europe. Cost of labor is one of the principal items in the manufacture of organics. This being so, it cannot be gainsaid that

The Reader



His Mark

THE ABC SYMBOL, which is printed at the head of this page is, in a very real sense, *your brand* on this magazine. Those letters stand for Audit Bureau of Circulations. The symbol indicates that the magazine is a member and supporter of that Bureau.

To the advertiser who contemplates using the magazine as an advertising medium, this symbol has a well-recognized significance. It tells him that the circulation records and practices of the magazine are wide open to the auditors of the Bureau, who check the publisher's claims and make public the precise terms and conditions under which subscriptions are obtained. And it assures him that the magazine stays in business by virtue of a demonstrated demand from its readers as shown by their paid subscriptions or newsstand purchases.

BUT HERE we are concerned only with the significance of ABC to you as a reader. For when the advertisers, the advertising agencies, and the publishers founded the Bureau nearly forty years ago to help establish honest circulation figures, they unwittingly set up a cooperative institution that has become a major safeguard for the interests of the reading public.

That is because membership in ABC constitutes one of the strongest guarantees that any publication can offer of its primary devotion to the interests of its readers. And by making that guarantee possible, ABC becomes a major safeguard of the freedom of the press, an objective of exceptional importance in these days when the public is flooded with propaganda from so many sources.

THE SUREST MEANS by which to preserve a free press is to keep it directly answerable to the reading public it would serve. It follows, then, that the survival of a truly free press must depend on its acceptance by that public; and that means in turn that the people must have in their hands some adequate means for holding the publishers responsible to them.

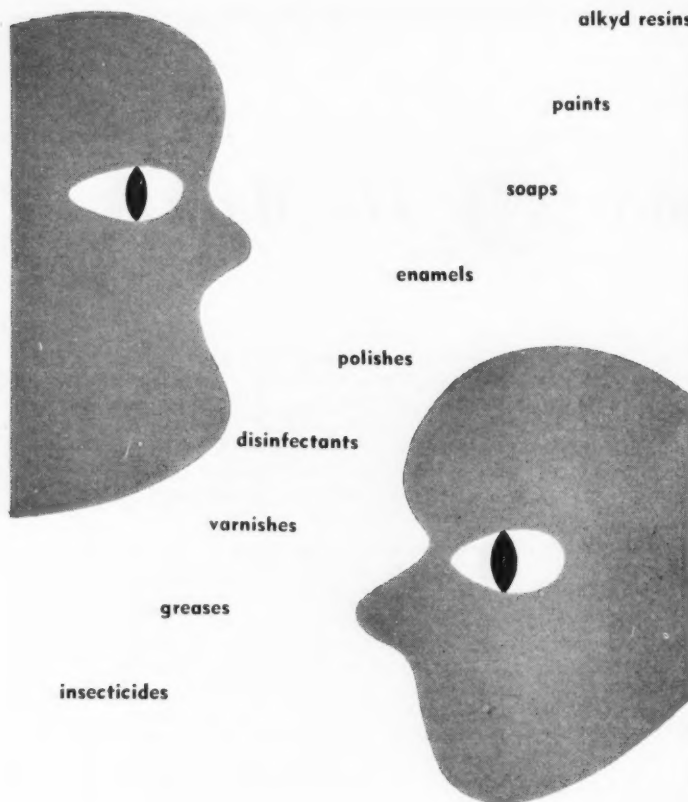
No one has yet devised any means to that end more simple, more direct or more practical than the paid subscription or newsstand purchase price. The right to purchase or refrain from purchasing a publication gives to the readers and to no one else the power to pass judgment on whether that publication should continue to serve the reading public.

TO SUPERVISE this vital process, to check and certify the integrity of the publication's circulation methods and claims, requires a strict and continuing audit of each publication's success in meeting this test of its public acceptance. To that essential function the ABC has contributed mightily by the conscientious performance of its mission. And that is why we are able to have a press supported, for the most part, by advertising revenues, but not controlled as to its circulation or content by any influence other than its readers.

When an advertiser consults the ABC statement of a publication to ascertain the amount, the quality and the trend of its circulation, he does so in the legitimate pursuit of his own interest. But at the same time, inevitably, he is helping the ABC to keep the press responsible and responsive to the reading public. For, in effect, he is asking the publication to demonstrate through its circulation figures that it owes its standing to a voluntary demand by its readers.

SO THE Audit Bureau of Circulations, by auditing and certifying paid circulations, has come to perform a vital service to the readers of this magazine and of every other member publication. And in performing that service, it helps to maintain in our country a press that is answerable to the reading public and to it alone. So long as the practices and principles for which ABC stands continue to prevail in American publishing, we shall find in it a sure support for a truly free press, responsible only to the public it serves.

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OPINION

without some kind of protection [we] cannot compete with European industry even in the U. S.

. . . Without adequate protection, U. S. chemical workers' wages would have to be cut to at least a fourth of present . . . or we will have to abandon the U. S. industry altogether. I doubt anyone would seriously advocate either course.

I doubt anyone would . . . advocate an embargo on organic chemicals. . . .

. . . At Torquay we reached an agreement with West Germany reducing our rates on most coal-tar products almost 50% to a duty of 25% plus 3.5¢ per lb. This slash does not come within your advocacy of *gradual* tariff reduction.

Although negotiations with England collapsed at Torquay because of her insistence on Empire preference, and although competitive dyes are entirely excluded from England, England still benefits from [our] concessions to West Germany. One would never guess this from reading the MacLean interview. . . .

Yet we still hear complaints. They do not want goods valued at their U. S. selling price . . . the only realistic value . . . set up to preserve and foster the growth of our industry. . . .

Suffice it to say that in the last session of Congress, the House Ways and Means Committee, having before it all the facts, declined to change this method of valuation . . . although urgently requested to do so by the State Department.

England does and can compete in this country . . . as does Germany. Imports of dyes in 1951 reached an all-time high of 4 million lbs. Aniline, among other low priced coal tar products, was imported in 1951 in the quantity of 1 million lbs. . . . Could this be the hypothetical product Mr. MacLean cites . . . the duty on which is "clearly ridiculous"?

I cannot resist the general observation that . . . parts of the editorial . . . and most of the piece on ICI . . . reflect the attitude being fostered here and elsewhere that we should be grateful to the Marshall Plan countries for their letting us help them. . . . We do not ask their gratitude

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

Address all correspondence to: W. A. Jordan, Chemical Week, 330 W. 42nd St., New York 36, N.Y.

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OPINION

. . . admire and applaud their valiant efforts in the war.

But having freely given deserved help, we should not feel obliged to continue to thank them for letting us do it.

With a chemical industry rebuilt and outproducing prewar, let them stand on their own feet on an equal basis. This they can do and more than do now with trade barriers lower than they have ever been.

We already are in danger of putting the shoe on the other foot by making our domestic industry unable to compete.

P. K. LAWRENCE

Chairman

International Commercial

Relations Committee

Synthetic Organic Chemical

Manufacturers Assoc.

New York, N. Y.

MEETINGS.

Tech. Assn. of Pulp and Paper Ind., New England Section, Berkshire Inn, Great Barrington, Mass., Oct. 10-11.

Tech. Assn. of Pulp and Paper Ind., Engineering Conference, Morrison Hotel, Chicago, Ill., Oct. 13-16.

Society of Chemical Industry, first Jubilee Lecture of Canadian section, Windsor Hotel, Montreal, Canada, Oct. 16.

Society of Plastics Industry, New England Section Meeting, Equinox House, Manchester, Vermont, October 16-17.

Society of Plastics Engineers, Cleveland-Akron Section and Akron Rubber group, Mayflower Hotel, Akron, O., Oct. 17.

National Safety Council, 40th national exposition, Chicago, Ill., Oct. 20-24.

Amer. Oil Chemists' Society, 26th annual fall meeting, Netherlands Plaza Hotel, Chicago, Ill., Oct. 20-22.

Wilmington-Philadelphia Organic Chemists' Club, Biennial Organic Symposium, Hotel duPont, Wilmington, Del., Oct. 23.

Fibrous Agricultural Residues Conference (Strawboard), Northern Regional Research Laboratory, Pere Marquette Hotel, Peoria, Ill., Oct. 27-28.

Assn. of Consulting Chemists and Chemical Engineers, annual open door dinner meeting, Hotel Belmont Plaza, New York, N.Y., Oct. 28.

Liquefied Petroleum Gas Assn., annual northeastern district meeting, Ambassador Hotel, Atlantic City, N.J., Oct. 30.

American Assn. of Textile Chemists and Colorists, Thirty-first National Convention, Hotel Statler, Boston, November 6-8.

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NEWSLETTER

The International Materials Conference will present a smaller target to snipers when Congress convenes next year. IMC has made a start on self-dismantlement as materials supply problems ease.

Last week the 15-nation Pulp-Paper Committee voted to dissolve itself after 17 months' existence because production and inventories of these commodities have increased beyond the peril point.

Ubiquitous Glenn McCarthy (oil, gas, hotel, chemicals) is now taking a flyer in the sulfur business. The Bolivian Government has just given him a contract to mine the mineral. "I won't know all the details until the final contract is delivered, he says. "I think the concession granted was for 25 or 30 years."

A new Bolivian sulfur corporation is being organized as a subsidiary of a McCarthy-sponsored American firm.

The American Dental Association isn't letting up in its fight for fluoridation. Taking to task the Delaney committee's let's-wait-'til-the-dust-settles attitude, the Association brands as "archaic and illogical" the denial of benefits fluoridation confers on the nation's children.

"The scientific facts about fluoridation speak for themselves," says the ADA Journal; "they have been recognized and accepted by every important national organization concerned with public health . . ."

But the whole subject of chemicals in foods doesn't stir many Washingtonians. The U. S. Department of Agriculture scheduled an evening course to be given by a Food & Drug Administration pharmacologist. It was cancelled the day before the first lecture, since only six prospective students had signed up—five of them reportedly FDA employees.

Now synthetic rubber producers are earnestly studying the market possibilities of rubber roads as well as their natural rubber competitors (CW Newsletter, Mar. 24, '51). Phillips Chemical has put in an experimental stretch of rubberized asphalt road at Phillips, Texas, where traffic is heavy and temperature varies 90 degrees during the year.

Chemical process firms are becoming increasingly public relations-conscious about air pollution, but citizens' tempers still run high.

Top officials of Mathieson Chemical have visited the Houston-Beaumont area to give assurances of cooperation (see p. 19): Treasurer W. G. Rouse told Houstonians that the firm had spent more than \$500,000 in the past three years on equipment to cut pollution at the local plant. And Executive Vice-President J. W. Newell assured Beaumonters that the firm will spend some \$40,000 on improvements there.

Nevertheless, 200 South Park (near Beaumont) residents at a meeting last week unanimously called for an injunction against offending firms in the area unless corrective steps are taken within 90 days.

And the Houston Chamber of Commerce's Industrial Pollution Committee has retained Kettering Laboratory (College of Medicine, University of Cincinnati) to conduct a survey of pollution along the Ship Channel. This is the first step in the Chamber's long-range program.

Meanwhile State Attorney General Price Daniel of Texas is itching for a fight. The natural gas tax case is scheduled for a hearing January 21 (CW Newsletter, Sept. 27), but Daniel will move for an earlier hearing—probably in November. Reason: He wants to present the state's case himself, before he goes to the U. S. Senate; and he wants a decision soon after the Texas legislature meets in January for its biennial session.

Monday was the final day for filing a court appeal of U. S. District Judge Sylvester Ryan's decision in the Du Pont-ICI anti-trust suit.

No appeal was filed, apparently signifying that the companies consider the U. S. case closed.

Long a plastics makers' dream, plastic automobile bodies may not be so far off. Kaiser-Frazer will build 1,000 Henry J's with polyester resin-glass fiber bodies developed in conjunction with Glasspar Co., maker of the glass fiber car that was shown at the recent National Plastics Show.

The experimental cars will be lighter (by 300 lbs.) and costlier (by \$600) than current Henry J models.

Other automobile makers are also experimenting with plastic bodies, but Kaiser-Frazer has taken the biggest plunge to date.

Market reaction is also being studied by Procter & Gamble—to a new, bacteria-destroying toothpaste called Gleem. It is "the only toothpaste with GL-70," says the company, which identifies GL-70 only as "a blend of anionic sulfonates."

P & G is now quietly test-marketing the product in Indianapolis.

The Bureau of Mines' new, experimental oil shale-extraction re-tort at Rifle, Colo., was completed this week. Built for the bureau by Blaw-Knox at a cost of \$334,000, the unit will process 160 to 400 tons of oil shale a day when it is put into full operation next January. The bureau hopes to prove that its process will make crude shale oil "at a cost competitive with natural petroleum."

The bureau also placed a contract with Catalytic Construction Co. (Philadelphia) for process and engineering design of a catalytic refining unit, an appropriation for which will be sought next year.

Recession ahead? Du Pont President Crawford Greenewalt told Louisvillians, when he visited the firm's neoprene plant there last week, that "big business" is optimistic over the future, looks for nothing resembling a depression. But there may be a slight recession—nothing that resembles what happened in 1932, but "a slight adjustment in business and industry that will be taken care of by new products."

Final Tariff Commission figures on production of synthetic organic chemicals during 1951, out just last week, show that output reached an all-time peak.

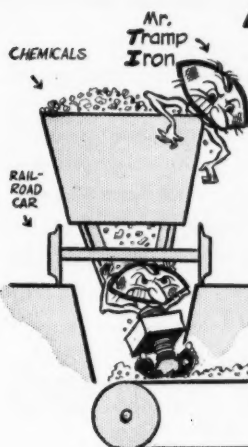
And production of salt, bellwether of inorganic output (soda ash, chlorine), gained 22% over 1950. All industries consumed more than during the previous year except dyes, soap, textile and leather processing.

Standard of California has just awarded a contract to Stone & Webster for a \$4 million phenol plant at Richmond. Scheduled on-stream date: by the end of 1953. That's Monsanto's target date, too (at Avon), so it will be a close race to claim first West Coast phenol production.

... The Editors



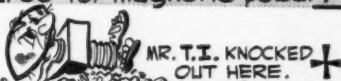
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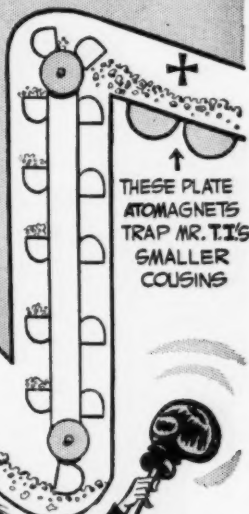
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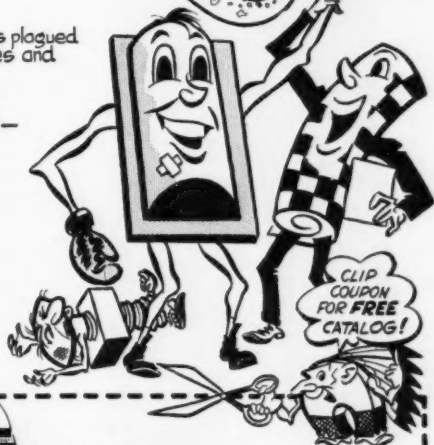
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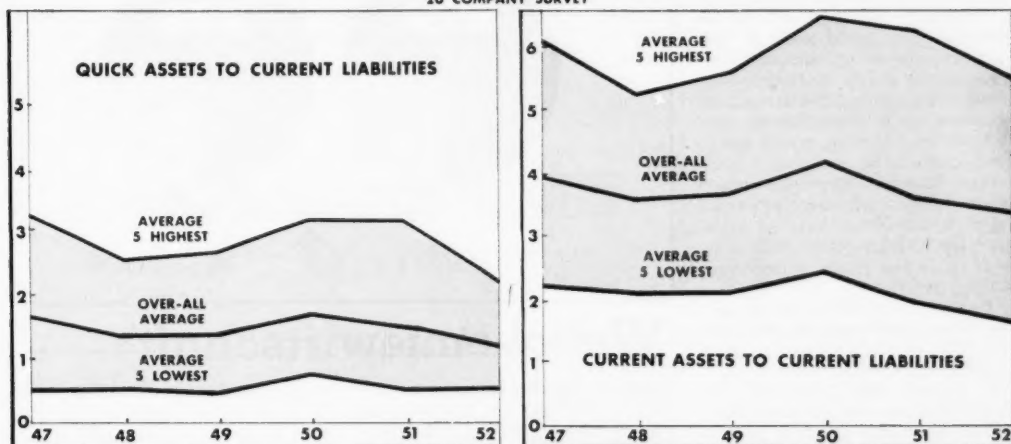
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BUSINESS & INDUSTRY

CORPORATE LIQUIDITY RATIOS

26 COMPANY SURVEY



Pinch in Cash

Burdened with higher material, labor, tax costs, chemical companies face an increasing need for cash.

In a 26-company survey, CW finds a three-year downward trend in corporate liquidity. Possibility for relief: Congress may let growth industry-irritating excess profits tax die next June.

"Corporate liquidity" is hardly a common phrase, and yet it is one that is becoming increasingly important to growth fields like the chemical process industries.

Roughly defined, corporate liquidity refers to the funds earned by a company which are not committed to some immediate debt or obligation, and hence are available for such uses as plant expansion.

Just in the past few weeks, a spate of events underline the fact that the halcyon days of high corporate liquidity are gone:

- Indiana Standard Oil, for example, sold \$140 million worth of convertible debentures for expansion purposes.
- Dow Chemical has marketed \$100 million worth of bonds, again to finance expansion.
- And even Allied Chemical and Dye, long cited as a chemical company with strong, conservative financial policies, had to borrow \$50 mil-

lion from a group of New York banks (CW, Sept. 6).

These are three among many cases; last year, out of better than a billion dollars' worth of new financing, bonds and notes accounted for better than 80%. Any such need for outside money points to a lowered ability of companies to finance their own expansion plans.

Two indices of corporate liquidity can be computed from company balance sheets: One is the so-called current ratio—current assets charted against current debts; the second—a ratio of quick assets (i.e., cash and marketable securities) to current debts. Both these indices (see charts) show a downward trend through the last three 12-month periods for the 26 companies checked.*

* The roster: Abbott Laboratories, Allied Chemical & Dye, American Agricultural Chemical, American Cyanamid, Atlas Powder, Commercial Solvents, Davison, Diamond Alkali, Dow, Du Pont, Hercules Powder, Heyden, Hooker Electrochemical, International Minerals & Chemical, Mathieson, Merck, Monsanto,

But no average can pinpoint the problem. The story of Allied Chemical highlights the matter. It had the highest quick asset-to-liability ratio in both 1947 (5.1) and 1948 (3.4), but went to 2.8 in 1950, to 2.1 in 1951 and 1.4 in the final period.

Monsanto Chemical, while not showing a consistent, year-by-year drop, went from 3.4 to 0.7 in the same six-year interval. Monsanto, like Allied, has turned to new financing.

Of course, neither the quick asset nor the current ratio is the ultimate gauge of corporate liquidity, since each depends as much on a company's immediate liabilities as on its assets.

One other criterion (of many) is the charting of working capital against total assets. But even here, the results show a similar trend.

Pinning the Cause: Actually, few businessmen will debate that liquidity in general has been going down, though they may have different opinions as to its most important cause. The three main reasons given are rising labor and material costs and higher taxes. Of the three, taxes—especially excess profits taxes—receive most of the blame, because of the particularly burdensome load which they put on growth industries.

But here, at any rate, there seems Penn Salt, Pfizer, Pittsburgh Coke & Chemical, Rohm & Haas, Spencer, Squibb, Union Carbide, Victor and Virginia Carolina.

To keep the large companies' reports from lending undue weight to results, ratios were computed for each company, and then the over-all averages figured.

to be some hope. The excess profits tax law will expire next June, and there's a chance that it won't be extended. Charles Sawyer, the present Secretary of Commerce, for example, told a group of businessmen that he doubts the tax should be renewed.

A group of financial executives at a National Industrial Conference Board meeting voted about 3 to 1 in expressing an opinion that Congress would see fit to let it expire. (On the other hand, they were almost unanimous in believing that the total tax take from business would not go down appreciably.)

The Chemical View: To growth fields, though, such excess profits tax relief would be an especial boon, since the basing point for such a law is prior to the period of industry's striking growth.

Perhaps the thinking on this subject is best characterized by what one chemical company financial vice president told a visitor last week:

"I honestly think that EPT has penalized us for our efficiency; and—well—if they take it off, it sure as hell won't solve all my problems, but it'll at least be a step in the right direction."

Tariff Bypass

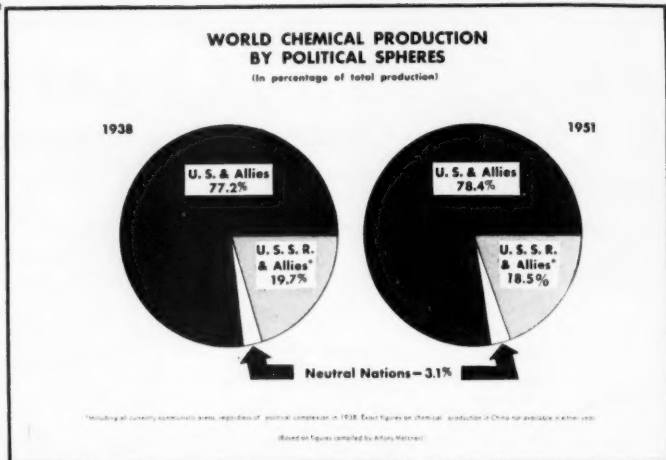
Hooker Electrochemical picked up at least two dividends this week when it decided to set up shop in Canada. (1) It strengthened its already strong caustic-chlorine market position with the British Columbia pulp and paper industry. (2) It neatly hurdled the tariff wall.

The company has formed a Canadian subsidiary—Hooker Chemicals, Ltd.—and is acquiring both a 60-acre site on Burrard Inlet, in the metropolitan Vancouver area, and a lease to adjacent tidelands bordering on a deep water channel.

The company for some time has been surveying the B.C. market for chlorine and caustic (*CW Newsletter*, May 10), neither of which is made west of the Canadian Rockies. A chlorine-caustic unit is a logical starting point for the new company, though ammonia could be produced once Alberta natural gas is piped to the coast.

Among other advantages of the chosen site: good transportation facilities and low electric power costs.

But in addition, Hooker's move to Canada represents a forward view to the time when other producers might build chlorine-caustic plants there. Sales from across the border would then be under a considerable (17½-25%) handicap tariffwise.



'Weltchemiewirtschaft'*

America's chemical industry, according to a leading trade publication in Europe, has come to hold such a dominant position on the international plane that it could almost be described in the words that Cassius applied to Caesar: "Why, man, he doth bestride the narrow world like a Colossus!" Here's the way the foreign news editor of the West German monthly, *Chemische Industrie*, sizes up this chemical Colossus of the United States:

- Its total annual production from 1938 to 1951 increased by 230%—more than that of any other nation, relatively or otherwise.
- It now accounts for nearly half of total world chemical production—more than four times the share of the next largest producer.
- It now ranks well in front of all other nations in volume of chemicals exported, and in coming years U.S. chemical exports will hit the world market in even larger quantities.

Russia on the Rise: Alfons Metzner, author of the *Chemische Industrie* survey on the world's chemical economy, was considered an expert on East European countries when he joined the Trade Association of [German] Chemical Industry some 20 years ago; last spring, he attended Moscow's "World Economic Conference" at which, incidentally, the Communists trumpeted their "world peace through world trade" theme.

On the basis of governmental reports and his own private sources, Metzner figures that Russia has made the next greatest relative increase in chemical production since before World War II. He opines that this is the top accomplishment in the field,

considering that the USSR lost much of its industrial capacity during the war and had to rebuild many plants from the ground up. Metzner's survey, however, does not mention that one factor in the come-back of Russia's chemical industry was the plant equipment—and whole plants—taken from occupied countries as reparations.

England, France and Japan have been boosting chemical output handily, he reckons, but not Germany.

"Germany is the only country whose 1951 chemical production was not up to its 1938 level," he asserts. "This disproves the statements in foreign papers that Germany has regained its monopoly position in chemicals."

Favors East-West Trade: Metzner, who founded and operated a chemical and pharmaceutical plant that now is held by the Polish government, plumps for the Conference-lauded idea that increased chemical trade between the Western nations and the Soviet bloc "would be a great victory for both sides."

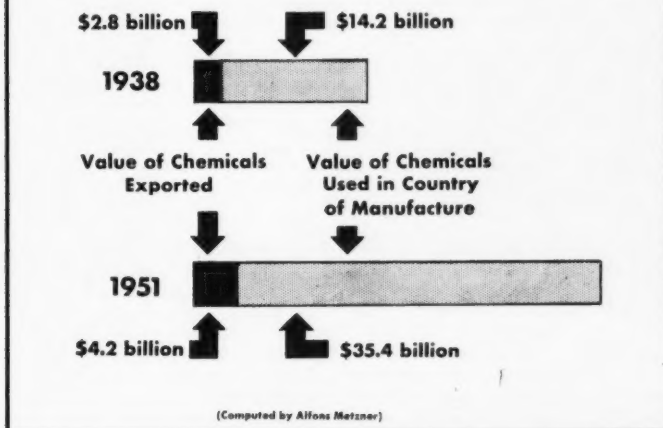
Among his reasons for this conclusion: Chemical exporters must expect keener competition in the world market as production increases in many nations. Resumption of trade with the Eastern countries could help to absorb much of the additional production. Russia, Metzner says, now is willing to import chemical fibers, textile auxiliaries and various synthetic materials; China, with nearly 500 million people and very little industry, "is a potentially good market" for almost all kinds of chemicals.

At present, Metzner observes, most

* In English, "Chemical Economy of the World."

WORLD CHEMICAL PRODUCTION AND EXPORTS

(Expressed in 1951 U. S. Dollars)



chemical products are consumed in the country of origin. Switzerland is the chief exception to this generalization, exporting 85% of its chemical production. Belgium exports about 50%, Netherlands 36%, Norway 30%, France 27%, England 16%, West Germany 22%, and the U.S. only about 7% of total chemical output. Russia, he adds, exports hardly any of its own chemicals, "consisting mostly of heavy chemicals, fertilizers and ferro-alloys, for which there is a steadily increasing demand within the country."

Base for Comparison: Data in this report are based on Metzner's own system for classifying chemical products, a plan that is to be taken up at a forthcoming inter-European chemical conference to be held in Paris. He says this system makes it possible to compare chemical production figures from all nations.

The magazine on whose staff Metzner is a member is widely circulated in Europe and is the official publication of the Chemical Industry Trade Association, which is 75 years old this month. Metzner holds a degree in textile technology and a doctorate in chemistry. He formerly was in the textile business.

His world chemical report contains three warnings: Political tension is causing dangerous inflation; rapidly increasing industrialization is making good quality raw materials more scarce; and rising production means keener competition throughout the world.

Few American producers will go along with all of his conclusions—particularly those concerned with Russia

—and not all will buy his figures on Russian output. But what an influential foreign journal reports on the U.S. chemical industry—in relation to the rest of the world—is of multifaceted significance.

LEGAL

'Breach of Promise': Dow Chemical has filed suit for \$875,000, alleging that a gas and oil company failed to live up to its contract to deliver 10 million cu. ft. of natural gas per day to Dow's Freeport plant. The petition states that Dow built the plant and a pipeline to the Matagorda County gas field on the basis of the 20-year contract with Hamman Exploration Co., signed in 1940. Dow says that gas production at that field stopped in April, 1946, but that five wells have been reworked and are capable of producing 19 million cu. ft. daily. The amount of damages asked is said to be the difference between what Dow would have paid Hamman and the amount Dow had to pay other gas producers since 1946.

Protection for Fish: Officials of Washington County, Ala., are asking the district court for an injunction to prevent Mathieson's newly opened multi-million dollar McIntosh plant from emptying waste matter into waters adjacent to the plant. Mathieson denies the county's contention that fish already are being killed by industrial wastes there.

Krilium vs. Acrylium: Monsanto and Long Island Paint & Chemical are

asking the Federal District Court in Brooklyn, N.Y., to approve their agreement for a consent decree that will settle Monsanto's suit against Long Island. Monsanto, maker of Krilium, charges that Long Island is infringing the Krilium trade-mark by marketing a soil conditioner under the name Acrylium.

Not Freckle-proof: FTC and Cooltan, Inc., have entered into a stipulation that requires Cooltan to discontinue certain advertising claims for its sun tan cream. The company no longer will aver that use of Cooltan will enable a person to acquire a sun tan faster, keep the tan longer, and escape freckles in the process.

Plastics Case Delayed: Chicago's Federal District Court has such a jam-packed docket that court officials don't expect any further action in the Plax vs. Mills case until next year. Plax won a decision on its charge of infringement of its patent on plastic bottle blowing process, but the final court order has not been issued. Meanwhile, Mills is appealing the decision. After posting a \$25,000 bond, Mills won permission to continue making and selling its product.

Process vs. Product

Parke, Davis & Co., waging a running law battle to defend its Chloromycetin patent in Israel, is trying to get the Israeli courts to adopt a new principle—that a patent can cover a "product of nature," regardless of the process used to obtain the product in commercial form.

That view was reached by the district court judge who found in favor of the American pharmaceutical firm three months ago, and Parke, Davis attorneys now are preparing to support that stand in their arguments before the Israeli Supreme Court.

Abic, the Israeli company in the case, has filed an appeal to the high court and also has won the right to sell its preparation, Synthomycin, pending the Supreme Court ruling. Meanwhile, Abic must let the court hold 25% of its receipts on Synthomycin sales, in case Parke, Davis is awarded damages. Parke, Davis wants the high court to nullify this arrangement.

Abic was "successful in most questions of fact," the court stated in explaining why it granted the delay in enforcing its original decision against Abic. It appeared that while the judge felt Parke, Davis deserved full patent protection on a product of great benefit to mankind, he was not at all cer-

tain that the higher court would accept his "extension of the principle on which courts have based themselves up to now."

COMPANIES.

B. F. Goodrich placed privately \$20 million worth of 3.25% notes, due in 25 years.

Dow Chemical has declared a 2.5% stock dividend, and also is offering 625,000 shares of common stock to its employees, who may subscribe in amounts up to 10% of their annual wages.

Seiberling Rubber stockholders have voted to increase the authorized number of common stock shares from 500,000 to 1 million.

Hudson Pulp & Paper has sold \$2 million worth of 3.75% notes, maturing between 1955 and 1966 to insurance companies.

Eagle-Picher has borrowed \$12.5 million at 3.75% with two insurance companies. Of this amount \$7.5 million will repay presently outstanding notes, and \$5 million will be added to working capital.

American Cyanamid has purchased a tract of land northwest of its present Pearl River, N. Y., Lederle Laboratories facilities.

Geneva Get-together

Yankee delegates were returning last week from the third biennial conference of the ILO's* chemical industries committee, which met in Geneva for two weeks with delegates from 18 member nations attending.

Since each delegation included representatives of workers, employers and government, and since member nations range from left to right on the political spectrum, there was a wide diversity in viewpoints.

Among topics on which opinions differed was the question of assigning workers to the various shifts in chemical plants. According to an ILO report, industrial physicians in the U.S. recommend keeping an individual worker on the same shift for one to three months at a stretch, while Europeans favor frequent rotation of workers from one shift to another.

College Aid Asked: Another ILO

* The International Labor Organization, founded in 1919 as part of the old League of Nations and now operating as a specialized agency of the United Nations, is made up of some 60 member nations, including the U.S. Its annual conference recommends legislation on labor and social problems for members.

CURRENT LIST OF DPA-CERTIFIED FACILITIES

Company, Location	Product	Amount Certified	% Certified
Missouri Farmers Assn., Galena, Kans.	Phosphate fertilizers	\$3,233,330	45
Western Phosphates, Tazewell County, Utah	Phosphate fertilizers	3,072,000	45
Thurston Chemical, Atlas, Mo.	Phosphate fertilizers	830,000	75
		1,065,500	45
Federal Chemical, Danville, Ill.	Phosphate fertilizers	389,518	45
Tennessee Corp., East Tampa, Fla.	Phosphate fertilizers	275,440	45
Coronet Phosphate, Tenoroc Mine, Fla.	Phosphate rock	850,313	50
Haasoc Valley Lime, Adams, Mass.	Dicalcium phosphate	254,109	40
Mississippi Chemical, Yazoo City, Miss.	Nitric acid, ammonium nitrate	2,856,550	45
Lindsay Chemical, West Chicago, Ill.	Thorium nitrate	1,750,000	70
Continental Oil Black, Westlake, La.	Carbon black	1,646,500	50
Allied Chemical & Dye, Tonawanda, N.Y.	Coal tar chemicals	375,000	50
American Cyanamid, Avondale, La.	Urea	7,500,000	45

report, this one on training of technical personnel for chemical plants and laboratories, suggests that college and university courses be revised for "more thorough coordination . . . with the real needs of the industry."

One controversial subject discussed was that of incentive pay, which in the U.S. is favored by many companies but is regarded with suspicion and distaste by labor unions.

Representing the U.S. at the chemical conference:

• Government delegates—Robert M. Barnett, economic officer and labor attache, U.S. Consulate in Geneva; and Charles C. Concannon, chemical division of the Commerce Department's National Production Authority.

• Employer delegates—Howard R. Huston, vice-president, American Cyanamid, New York; and Henry W. Johnstone, vice-president, Merck & Co., Rahway, N.J.

• Union delegates—Harry O'Connell, local No. 2, International Chemical Workers Union (AFL), East St. Louis, Ill.; and Joseph Joy, vice-president, United Gas, Coke & Chemical Workers of America (CIO).

Also attending were W. P. Gage, vice-president of Shell Chemical, New York, as an alternate employer delegate; and Philip A. Singleton, assistant managing director of Monsanto Chemicals, Ltd., London.

Full report of the proceedings will be released later.

EXPANSION.

Sulfuric Acid/Triple Superphosphate: Eagle-Picher will produce about 240 tons of sulfuric acid per day in a zinc roasting and acid manufacturing plant which it will build near Galena, Kan. Cost of the plant will be \$4 million; completion is scheduled for early 1954.

Most of the acid to be produced will be sold under long-term contract to the Missouri Farmers Association which this week received a tax amorti-

zation certificate for a plant at Galena to produce triple superphosphate fertilizer via wet-process phosphoric acid.

• **Phillips Chemical**, too, has revealed plans for a triple super plant. It will construct a 405 ton/day facility at the Adams terminal near Houston, Tex. Part of its sulfuric needs will be supplied from its captive sulfur production in West Texas.

• **Ammonium Nitrate:** Billings, Mont., has been selected as site for Rocky Mountain Chemical's proposed \$8 million ammonium nitrate plant. Work on the plant, with an announced capacity of 120 tons of the fertilizer material daily, is to start before year's end.

How They're Doing

This month some of the plants in Louisville and surrounding Jefferson County, Ky., will begin to know what progress they have made over the past five years in eliminating the smoke problem that has aroused civic ire, resulted in a new air pollution law this year (CW, April 12). A 110-plant survey will be launched by the Coal Producers Committee for Smoke Abatement.

The survey, similar to ones made in 1941 and 1947, will be conducted free of charge by the group, whose secretary, H. B. Lammers, outlined plans for the project at the regional conference of the Air Pollution Control Association of America held in Louisville last week.

To Louisvillians, the problem of curbing smoke and smog is vital because of the city's location in a valley; winds pass over, but not through it. Residents of the West End (not unlike their Texas counterparts—page 19, this issue) have been increasingly vocal against smog and industry.

The new survey, however, is only the latest of current ones. Just getting under way is one being conducted by Battelle Institute (CW, June 28). Eight chemical companies are among the firms paying for this.

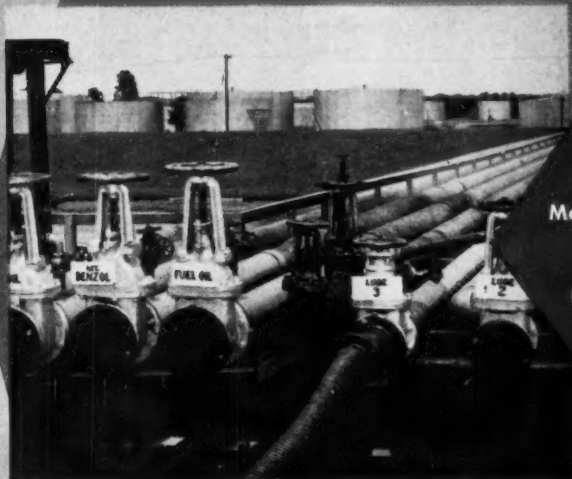
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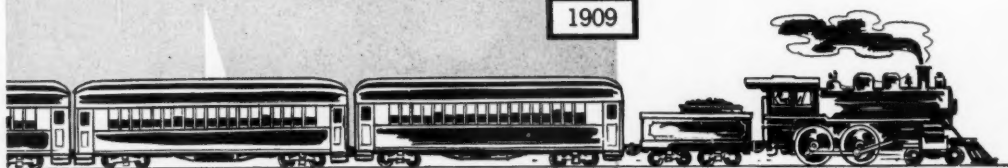
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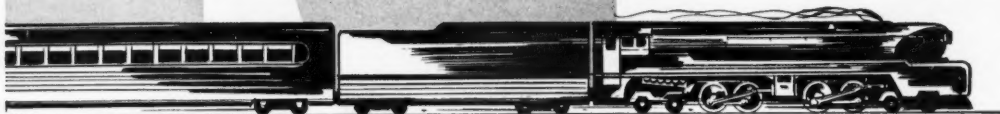


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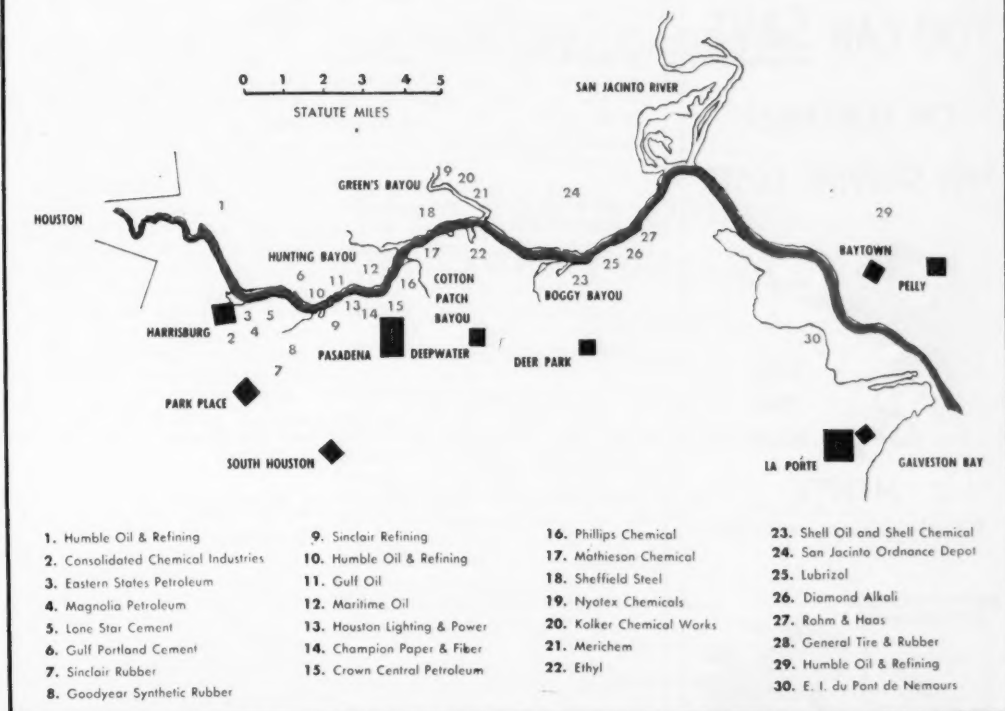


1952



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Chemical Processing and Oil Refining Plants



HOUSTON SHIP CHANNEL: For over 100 CPI plants, an ideal location accessible by rail and water; for 800,000 nearby Texans, source of industrial fumes reportedly causing coughing and headaches, corroding window screens and blackening paint.

Between Bull and Bear

Chemical processing companies can see in the tumult at Houston, Tex., a real-life showing of the uncomfortable position such companies get into when the public yells for quick action to stop air pollution.

Firms that own chemical and petrochemical plants along the serpentine route of the Houston Ship Channel are being squeezed from two sides: On the one hand, residents of the area have been applying pressure (through public officials) to try to force the companies to end pollution fast, at any cost. On the other hand, the companies have run into the inexorable pressure of economic and scientific limitations.

Petition & Ultimatum: While civic cries for pollution control have been part of the Houston scene ever since the flat, sandy bottom land near Galveston Bay became a favorite site for industrial plants, events of this past summer have transformed them into

one long, loud public howl.

In June, a breakdown at Mathieson's sulfuric acid and fertilizer plant near Pasadena (No. 17 on the map) loosed a great volume of dense, white, eye-smarting fumes that were carried by the night breeze to communities six and seven miles away. Next, 3,000 irritated citizens of the Green's Bayou vicinity signed a petition to the Governor asking the state to clamp down on air polluters. Then County Health Director L. D. Farragut gave Mathieson an "ultimatum" to stop alleged pollution by Aug. 25.

This intensified stress led to the calling of two public meetings at which citizens, public health officers, district attorneys and company officials spoke their pieces. At the second meeting, Rex G. Baker of Humble Oil & Refining illustrated industry's position with an anecdote of two men crossing a pasture.

When a bull charged, one of the

men shinned up a tree, the other jumped into a hole. This second man kept popping out of the hole after the bull passed, then diving back in as the bull rushed again. When the man in the tree advised him to stay down in the hole until the bull went away, yelled the second, "Stay down, hell—there's a bear down there!"

Researchers Stumped: Also at the second meeting on this pungent topic, company officials detailed the research work they've paid for and the engineering improvements they have made, all for the sake of eliminating air pollution. Malcolm D. May of Champion Paper and Fibre said his company's Houston division has spent more than \$1 million on research and equipment for this purpose, and Treasurer W. G. Rouse of Mathieson came all the way from Baltimore to report his company's solicitude about this problem.

But all company men agreed that

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researchers still haven't been able to figure out all the answers on this subject, and C. E. Lyon of Diamond Alkali's Deer Park Works isn't sure that they ever will.

"God Himself put the smell in the various chemicals," Lyon reminded the audience of some 300 persons. "He put the smell in iodoform; He put the smell in onions; and no one can take that smell out." This view was reinforced by a spokesman for the Houston Chamber of Commerce committee on air and water pollution; he observed that: "Industrial air pollution can never be entirely eliminated if we are to have industry. If we have no industry, we have no Houston, or Harris County Industrial Development Area."

Kindliness, Not Compulsion: So far, despite warwhoops by some residents who seem thirsty for corporate blood, the public officials have been following a policy of patience and tactfulness in dealing with the companies. Dr. Farragut's staff has been meeting almost daily with representatives of the various concerns, and State Health Officer George W. Cox holds that pollution can be controlled "through agreement and cooperation, reinforced by a representative citizens' committee and supported by a committee of technicians."

Assistant District Attorney John Richardson has prepared a petition

asking for an injunction against Mathieson, but he is hanging onto the petition, waiting to see if the situation will be bettered without a lawsuit.

Since the second meeting, Mathieson has "cured the dust problem by installing bag-type dust collectors and heaters to prevent moisture conditions in the filters," according to Sam Cottrell, director of operations for Mathieson's agricultural chemical division. Other new equipment is being tested, he adds, and "In six months to a year, we will have removed all causes of complaint."

Many of the company officials who spoke at the meeting live in the towns along the 25-mile channel, and for them this problem is the cause of a kind of triple cerebral neuralgia: the headache over community relations, a headache over the trouble and expense of trying to eliminate fumes, and the headache from the fumes themselves.

LABOR

Washington Edicts: This week's crop of Federal pronouncements include four that pertain to the chemical process industries. One is a plea for personnel directors to look over current employment needs, bearing in mind that many jobs can be handled in first-class style by persons who have par-



New Use for Old Stuff

VOLCANOES seem to be turning into chemical process industries. First, sulfur deposits were discovered in the crater of fabled Mount Kilimanjaro

(CW, Nov. 10, '51). Now, volcanic ash which Mount Vesuvius spewed over the ancient city of Pompeii is finding use as agricultural fertilizer.



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tial physical handicaps. Next week is annual "Employ the physically handicapped week," and the chemical industries are asked to hire their share of the approximately 30,000 handicapped workers who comprise the national goal for the week.

- A chemical company was exonerated in an "unfair labor practice" case before the NLRB, which does not identify the parties when the charges are dismissed as unfounded. A labor union had accused the company of firing four employees only because those persons had been active in union affairs. NLRB found that the company's reasons for the discharges appeared to be valid: two because the jobs were abolished for economic reasons, one for unsatisfactory work, and one for lack of work.

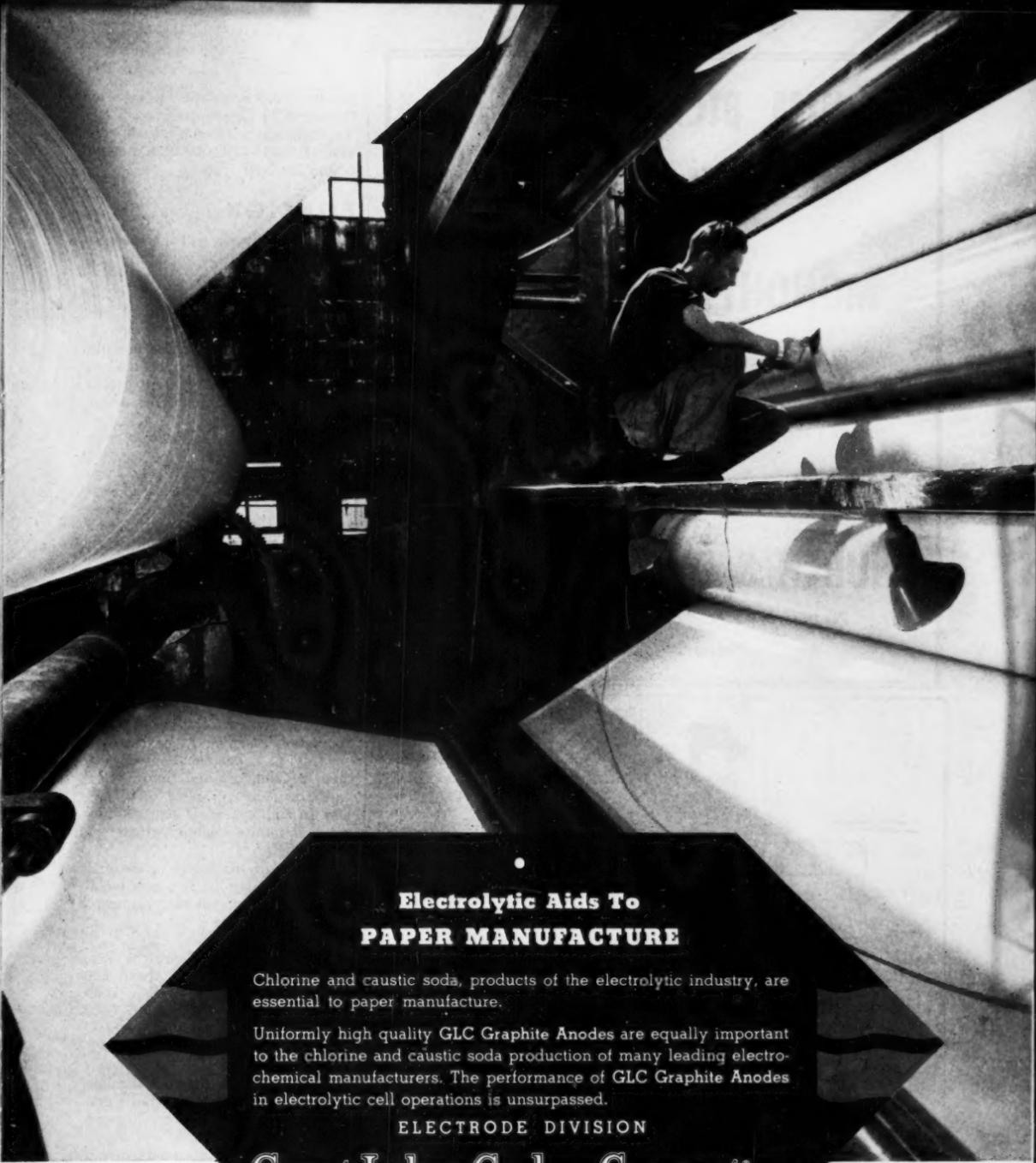
- WSB has adopted the Salary Stabilization Board's definition of professional engineers who are exempted by Congress from wage controls. This interpretation stresses that the engineer must be employed in his professional capacity—not in sales or administration. The exemption does not apply to engineering assistants or to chemists and other scientists.

Few New Strikes: Only one large strike sprang up, weed-like, on the CPI lawn, but it packs a triple wallop. About 2,700 members of District 50, United Mine Workers, staged a pre-dawn walkout at all three plants of Wyandotte Chemical Corp. in Wyandotte, Mich., stopping both production work and also construction of a new \$25 million research center. Local union President James McElroy says his followers are protesting a company move to transfer certain chores from technically trained personnel to hourly-paid workers. He fears that the company could assign difficult work to untrained men, then fire them if they can't perform the work properly.

This new strike means that two large alkali plants are out of production, as members of the CIO Gas, Coke & Chemical Workers still are picketing Columbia-Southern's plant at Corpus Christi, Texas.

Concord Reached: One long strike and one brief walkout have been patched up this week. At Detroit, 450 Gas-Coke members are back at work at Acme Quality Paints following a 104-day strike. The two-year settlement includes wage increases ranging from 7 to 22¢, union shop, dues check-off and vacation and insurance benefits.

At Baton Rouge, La., about 100



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AFFILIATES—BUTCHER-ARTHUR INC. WATERWAYS TRANSPORTATION, INC.

plumbers and machinists are back on the job at the Copolymer Corp. plant. The company had filed a suit asking a total of nearly \$200,000 from the two unions involved.

FOREIGN.

Penicillin: Australia will not relax its embargo on penicillin importation, its government indicates. Officials feel that the government-operated Commonwealth Serum Laboratories can supply enough for local use.

Hungary: The Duclos pharmaceutical works at Debrecen, scheduled to begin production this year, is expected to have a surplus for export.

Wood Pulp/South Africa: Preliminary work has started on the proposed wood pulp and rayon production works south of Durban in Natal. First unit (costing \$10 million) will produce 100,000 tons of pulp for export. Rayon spinning facilities will be built later.

Uranium/Australia: Deposits of uranium-containing ore in the Northern Territory are considered promising enough to set up extraction facilities. The government plans to invite private firms to construct and operate the plant.

Ammonia/Norway: The Norsk Hydro concern is planning to increase the capacity of its ammonia production units at Glomfjord and Heroya. Cost of the work is equivalent to \$3 million. In addition, nitric acid and ammonium nitrate facilities at Heroya are expanded.

Phosphorus, too, is high up in Norsk Hydro's planning list. It is now building an 8,700 ton-per-year elemental phosphorus furnace.

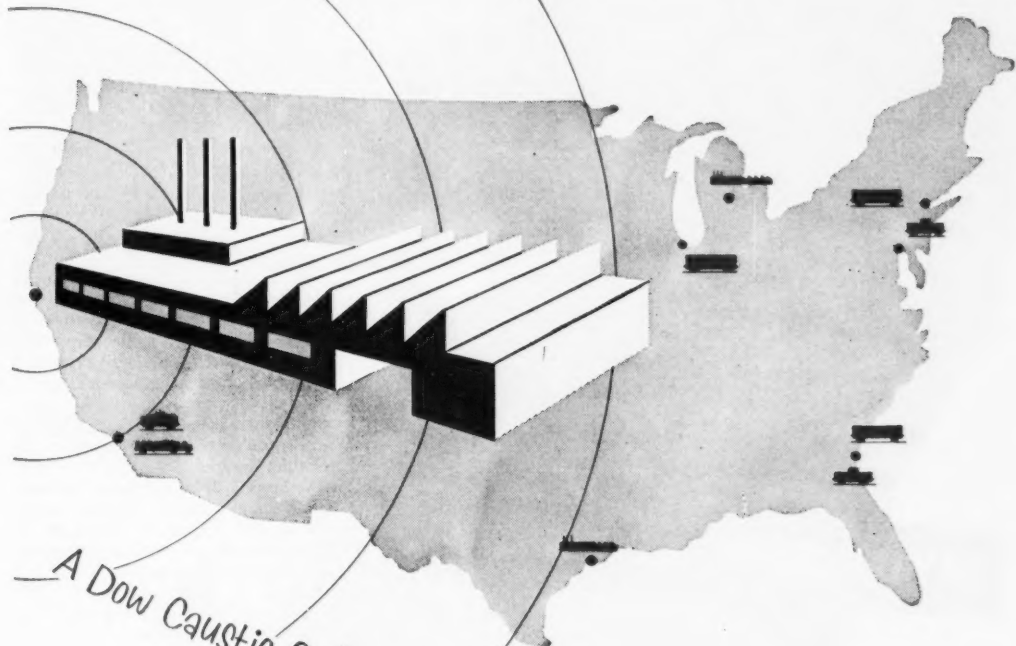
Tasmania/Sulfuric: Electrolytic Zinc of Australasia, Ltd., will spend \$10 million on a facility to produce 100,000 tons of sulfuric acid and 55,000 tons of ammonium sulfate. The plant is to be built near Risdon, Tasmania.

Japan/Technical Assistance: The Mitsubishi Chemical company has entered into agreements with Monsanto through which Monsanto will supply technical know-how for production of chemicals in Japan. The company now is seeking aid in making chemical fibers from German firms.

• The company expects to change production emphasis from that of pre-war, concentrating on manufacture of chemicals from native raw materials.

Malaya/Imports: No longer to be freely licensed for import from hard

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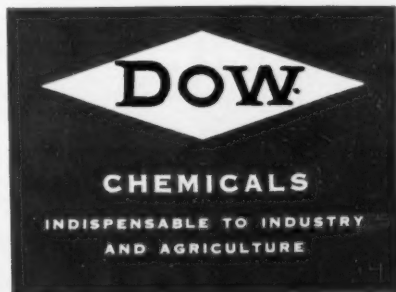
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currency sources are lithopone, sodium arsenite, methyl alcohol, p-methyl aminophenol sulfate, titanium dioxide and rubber accelerators.

Germany/Exports: The percentage of German chemical production going to export markets has been increasing. Where in 1950, 16.0% of production was exported, 22.4% was exported in 1951. Chemical exports, as a percentage of total exports, went from 12.9% in 1950 to 14.5% in 1951.

• Incidentally, India has become one of Germany's primary chemical markets. Where DM 22 million worth were sold in 1950, the 1951 figure was DM 59 million. Russian chemicals, too, have been selling in the Indian markets, and one Japanese industry official who recently visited there said he is "amazed by the low price and high quality" of such material.

Philippines/Licensing: Foreign chemical consultants in the Philippines, including Americans working for American firms, will have to take a government examination or otherwise prove themselves capable, if they want to hold their jobs longer than six months. Consultants called in for shorter periods are to be exempted from this part of a new act regulating consulting practices in the islands.

KEY CHANGES . .

William H. Steinkamp: To vice-president and general sales manager, Beckman Instruments, Inc., South Pasadena, Calif.

Christian V. Holland: To director, chemical research, Spencer Chemical Co., Kansas City, Mo.

Howard F. Schum: To assistant to president, Arner Co., Buffalo, N.Y.

Alfred M. Esberg: To board of directors, American Potash and Chemical Corp.'s Eston Chemicals Division, Los Angeles, Calif.

Mortimer B. Burnside: To chairman of the board, Chemical Ventures Syndicate, Inc., New York, N.Y.

Donald S. Gilmore: To chairman of the board and managing director, The Upjohn Co., Kalamazoo, Mich.

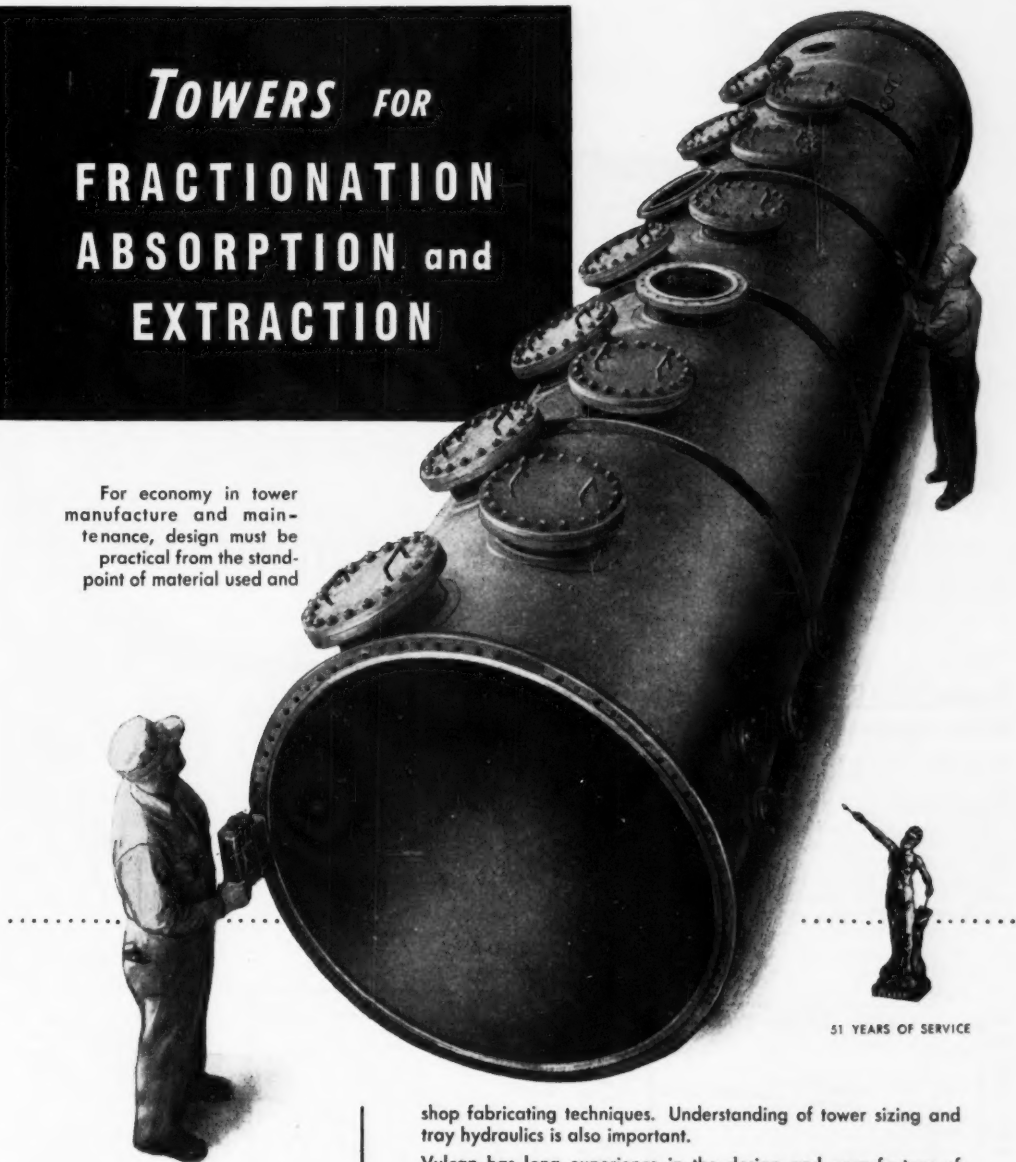
Frank Wolcott: To general manager, manufacturing, Wyandotte Chemicals Corp., Wyandotte, Mich.

KUDOS

Sidney D. Kirkpatrick: Editorial director of CHEMICAL WEEK and *Chemical Engineering*, to honorary member of American Institute of Chemists.

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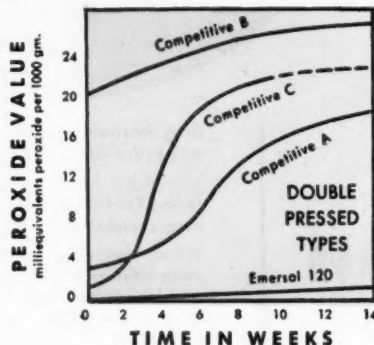
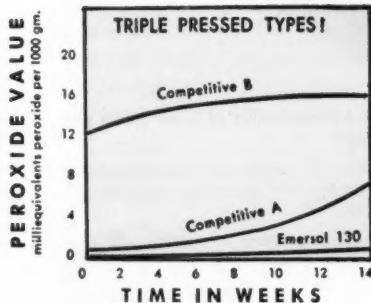
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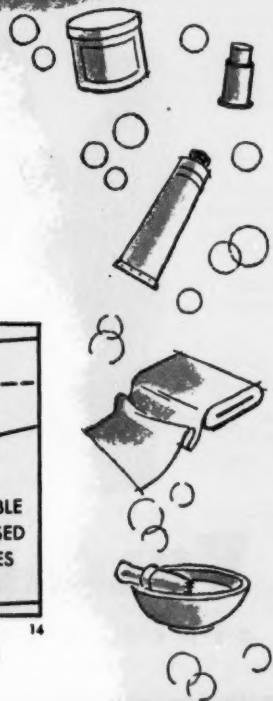
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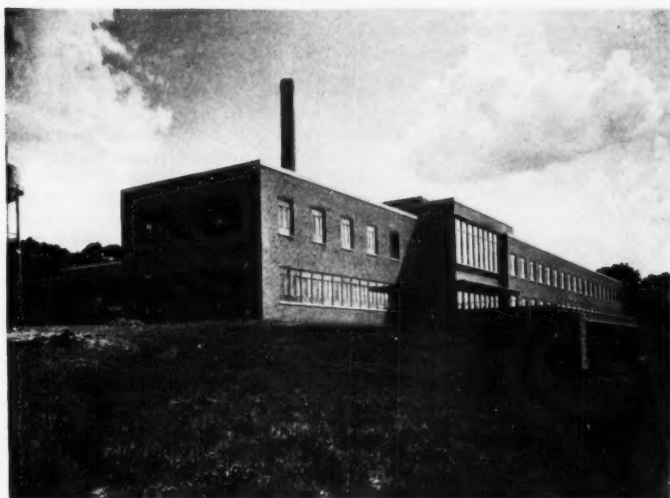
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RESEARCH



P & G AT MIAMI VALLEY: Parking space and the atomic bomb.

Expansion Checklist

Research expansion today, more than ever, calls for careful weighing of unique administrative, operating factors.

Here's how one company resolved its expansion problem, why it decided to build, what it looked for in a location.

In the flood of recent industrial expansion, research has certainly not lagged. Hardly a company exists in the chemical process industries that has not, in the near past, increased its physical capacity for research. Procter & Gamble, with its sparkling new Miami Valley (Ohio) laboratories, is latest to get on the bandwagon. Why P & G decided to build a new research center and what factors it considered in choosing a location point up a representative modern approach to a vital management problem.

Basic to the issue is an insight into the nature of research. Says G. T. Halberstadt, associate director in charge of operations and planning of P & G's chemical division: "The ultimate objective . . . is, of course, new and improved products. These products result today, not from simple innovations . . . but rather from coordinated studies by highly trained scientific personnel. It is a never-ending, ever-expanding effort."

Build Anew: "There comes a time," says Halberstadt, "when it is no longer possible to house the added staff, when new facilities are necessary . . . We thought first of expanding and remodeling our present facilities. It

wasn't possible to do this because we did not have any ground adjacent to the present facilities that could be made available cheaply. We would have had to relocate some of the factory operations which are near to research . . . at Ivorydale.

"So, in our case you might say that we started with what seemed to us almost an incontrovertible factor—we could not expand in our present location."

But aside from the decisive factor of space limitation, a number of other important considerations today works in favor of building anew rather than adding to existing facilities or converting other buildings to research quarters. The simple fact is that the industrial research needs of even ten or fifteen years ago, in many cases, just aren't adequate for the current balanced program.

Among others, these activities of the modern research organization are cited by P & G as either relatively new developments or demanding special building features, generally lacking in older structures:

- Tracer studies—A potentially serious health hazard, radioactive isotopes are rapidly becoming an indis-



. . . of plentiful power, pure water, high quality labor, and natural recreational facilities, located in a booming market area."

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*From text of speech delivered to Tulsa Chamber of Commerce August 21, 1952.

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RESEARCH

pensible research tool. For maximum safety they require specially designed laboratories with independent ventilation systems.

- High-pressure research—Also hazardous, high-pressure reactions are the key to improved processes, new products in many fields. Technical workers must be protected by heavy steel partitions, relief blow-outs and other special structural features.

- Physical methods of analysis—New instruments—electron microscope, X-ray diffraction units, mass spectrometer, infra-red spectrometer, etc.—have come into wider use in recent years. In some cases they take up relatively large areas; in most cases they call for constant and close temperature control. Such rigid conditions are, for the most part, unattainable in older buildings.

- Nutrition investigations—Biochemists have learned a great deal in recent years about the use of laboratory animals in nutrition studies. For statistically reliable results, many more tests are performed today than were done a decade or two ago. And animals are kept under more carefully controlled conditions to prevent the spread of communicable diseases. To this end, larger, more sanitary animal rooms than those provided for in laboratories ten or fifteen years ago are needed. And round-the-clock air conditioning is a must.

Choosing A Spot: Where to put new research laboratories, at first glance, seems to be a disarmingly simple problem. But it's hardly that; it's really a composite of several vital questions that ultimately decide the issue.

Not the least of these is: Do we want to separate completely from manufacturing and accessory technical facilities? Valid arguments exist for and against complete separation. Those in favor argue that separation minimizes technical service problems and routine jobs assigned to the laboratory; permits location in more pleasant surroundings close to consultants and educational centers; simplifies security problems when secrecy is desired; and usually insures the availability of adjacent space for expansion.

Advantages of remaining within the plant area: it permits closer coordination with production; simplifies the execution of occasional large-scale experiments; provides benefits of close contact between laboratory scientists and production men; and lowers overhead costs by joint use with other departments of cafeterias, clerical personnel, guards, etc.

P & G chose to separate its new

laboratories completely from its main Ivorydale facilities, located there several miles away at Venice, O. Principal reasons in Halberstadt's words:

- "Long-range research which is essential to the company can be carried out best if the men doing it are not called upon frequently to help with current developments. Some people in our organization feel that geographical . . . separation . . . is desirable . . . will tend to make it more difficult for those responsible for [short-term problems] to call upon those doing long-range research."

- "Separation of research facilities is the best insurance . . . to protect loss of technical staff and equipment on which the future of the company depends." Fires and explosions in plant areas are just two of the potentially devastating exigencies cited in this connection.

But there are other, more workaday factors that were considered:

- "We use considerable quantities of water . . . in our work. Therefore, we had to have an adequate source of water and a means of disposing of the used water. The site chosen is adjacent to the best underground supply of water in Ohio and there is a river for disposal of treated waste."

- "The site is near a major gas pipe line and a major electrical distribution system."

- Ample automobile parking space is available.

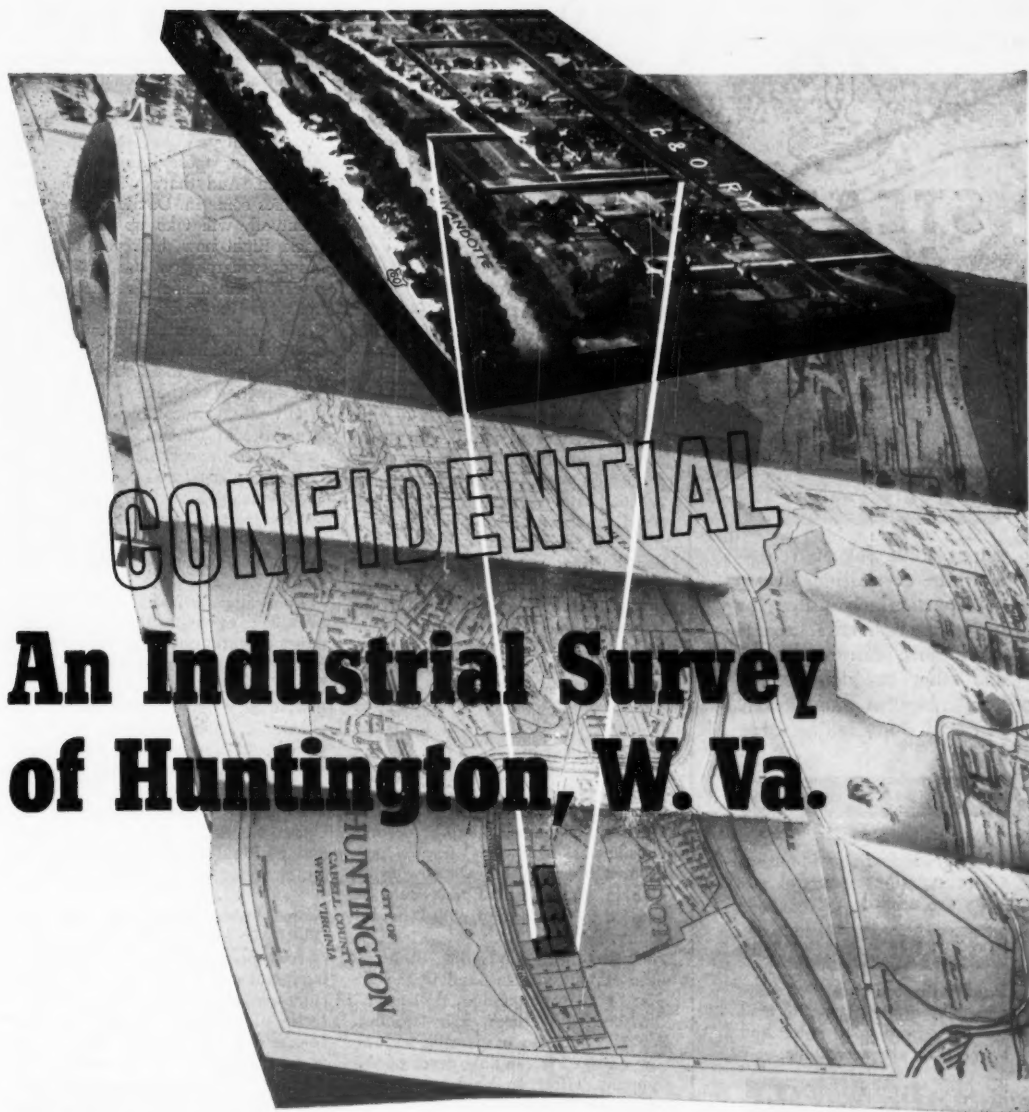
Of course, there's plenty of room for expansion. And by way of indelible proof that P & G has a watchful—if understandably wary—eye to the future, Halberstadt points out: "There is a screening hill that would protect the new laboratory from harm even though Cincinnati . . . should be destroyed in atomic attack."

Film Fare

A Research and Marketing Act project of U.S. Department of Agriculture has recently yielded a promising laboratory method for preparing transparent, edible amylose films.

The films are easily digested, have commercial possibilities as food and pharmaceutical packaging materials.

Developed at Northern Regional Research Laboratory (Wyndmoor, Pa.), the USDA technique works, briefly, like this: Amylose, from starch, is dissolved in a hot water solution of butyl alcohol. After distillation (to remove most of the excess alcohol) and filtration through a coarse fritted-glass disk, the hot solution is spread on polished glass or metal plates coated with a silicone preparation. The film is formed on cooling.



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RESEARCH

Digestibility isn't the sole attribute of the new amylose films. USDA tests show that after suitable processing their flexibility, tensile strength, tear resistance and bursting strength all compare favorably with those of commercial transparent packaging materials. Moreover the films are transparent to ultra-violet light and are readily colored.

A Problem: On the debit side, they're prone to become brittle on prolonged exposure. Plasticizers (e.g. glycerol) are one possible solution for this problem, could also be the means for adapting the films to special uses. Commercial prognosis for the new USDA development is hopeful—with reservations. The amylose soup is versatile. Aside from its role as a film-former, it may be used as a transparent coating substance, can be applied by spray or dip.

Cost of the amylose, however, looks like the limiting factor. It's a component—about 25% weight—of cereal and potato starches, is obtained in the laboratory by rather costly fractionation procedures. Industrial applications are not improbable, however, if more economical extraction techniques can be developed, or if starches of high amylose content can be found in reasonable supply.

New Silicate Spawn

Davison Chemical Corp.'s organic fluosilicates head this week's new product offerings. Six are now available in sample quantities, could be boosted to pilot output with little difficulty.

They are the methylamine, dibutylamine, ethylhexylamine, aniline, morpholine and rosin amine derivatives. Davison calls them silicofluorides. But silicofluorides or fluosilicates, the new entries are tangible proof of the company's efforts to develop profitable outlets for fluosilicic acid—by-product of its fertilizer manufacturing activities.

A normal by-product of phosphate rock acidulation, fluosilicic acid is somewhat of a problem child. It contains some hydrogen fluoride, can't be spewed indiscriminately into the atmosphere. Recovery of the acid is a must; disposal is every fertilizer producer's headache.

The recovered acid is not completely written off. It's used to make sodium fluosilicate which, in turn, is used as a laundry sour, insecticide, mildewicide, aluminum flux, and ingredient in the manufacture of vitreous enamels, frosted and opalescent glassware. The potassium, zinc, am-

monium, magnesium and other inorganic salts are additional outlets for the acid.

Shining Hope: But there's generally a healthy surplus, even after the demand for these inorganic markets is sated. And that's where the new organics come in. Davison hopes they eventually will take up some of the slack. Right now, however, this goal hinges squarely on the outcome of research still ahead. Specific applications for the compounds are practically non-existent. Davison is confident that potential uses exist for those who are willing to track them down.

Production of the new fluosilicates, at any rate, is no problem. Recovered aqueous acid (about 26% fluosilicic) reacts with the organic amine to yield the amine fluosilicate. Cost of the new compounds will be determined largely by the cost of the various starting amines. Fluosilicic acid today sells for about 5¢ a pound (based on 30% acid).

Four-ounce samples of the first six members are immediately available; developmental quantities may be had on 30 to 90 days' notice. Other members of the series, available in research quantities: monoethanolamine; diethanolamine; triethanolamine; isopropylamine; diisopropylamine; triisopropylamine; di-n-propylamine; n-butylamine; dimethylamine; trimethylamine; n-octylamine; n-octadecylamine; cyclohexylamine; diphenyl guanidine; and pyridine fluosilicates. Others are on the way.

Amine Debut: Rohm and Haas Co. (Phila., Pa.) is now offering the first development quantities of tert-butylamine. It's the latest and lowest molecular weight member of the company's series of tert-alkyl amines. A clear, colorless to amber liquid which boils at 44 C to 50 C, the new amine undergoes alkylation, cyanomethylation, cyanoethylation, oxidation and a number of other reactions typical of its family.

Suggested uses are in the preparation of vulcanization accelerators, oil and grease additives, insecticides, surface-active agents, antimalarials and corrosion inhibitors. It's also useful as a catalyst in certain reactions.

Alkaloid Insight: Researchers Harold Nash of Pitman-Moore Co. and Robert Brooker of Indiana Central College bring to light some interesting new data on protoveratrine, a hypotensive alkaloid from the white hellebore (*Veratrum album*) plant. The alkaloid was extracted by counter-current distribution techniques, was found to be

VINYL MONOMERS *now available from Cyanamid*

ACRYLAMIDE	$\text{CH}_2=\text{CH}-\overset{\text{O}}{\parallel}\text{CNH}_2$	M.P. 84.5°C.
N- <i>tert</i> -BUTYLACRYLAMIDE	$\text{CH}_2=\text{CH}-\overset{\text{O}}{\parallel}\text{C}(\text{NH}-\text{C}(\text{CH}_3)_3)$	M.P. 128-130°C.
N,N'-METHYLENEBISACRYLAMIDE	$\begin{array}{c} \text{O} \\ \parallel \\ \text{CH}_2=\text{CH}-\text{CNH} \diagdown \\ \text{CH}_2=\text{CH}-\text{CNH} \diagup \\ \parallel \\ \text{O} \end{array} \text{CH}_2$	M.P. 185°C. (d)
N,N-DIALLYLMELAMINE	$\begin{array}{c} \text{CH}_2=\text{CH}-\text{CH}_2-\text{N} \\ \text{CH}_2=\text{CH}-\text{CH}_2-\text{N} \end{array} \begin{array}{c} \diagup \text{N} \diagdown \\ \diagdown \text{C} \diagup \\ \diagup \text{C} \diagdown \\ \diagdown \text{N} \diagup \end{array} \begin{array}{c} \text{NH}_2 \\ \text{NH}_2 \end{array}$	M.P. 142°C.
TRIALLYL CYANURATE	$\begin{array}{c} \text{CH}_2=\text{CH}-\text{CH}_2\text{O}-\text{C} \diagup \text{N} \diagdown \text{OCH}_2-\text{CH}=\text{CH}_2 \\ \diagdown \text{C} \diagup \\ \diagup \text{C} \diagdown \\ \diagdown \text{C} \diagup \end{array} \text{OCH}_2-\text{CH}=\text{CH}_2$	M.P. 27°C.

available in trial lot quantities

Polyfunctionality and crystallinity are two particular advantages of these five monomers. Polymers prepared from them contain residual groups which are chemically reactive and therefore useful for subsequent modification of the polymers. The high melting points of these monomers provide excellent shelf life. It is suggested that they be evaluated in the preparation of surface coatings, textile and paper finishing agents, synthetic fibers and molding resins.

Detailed technical data and samples of any of these five products may be obtained by completing the coupon below.

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CW 9-27

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Company

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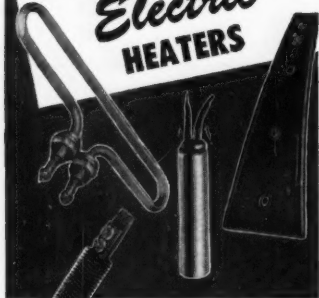


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RESEARCH

made up of two separate alkaloids.

A new member of this pair has been tentatively named oxyprotoveratrine X. On hydrolysis it yielded protoverine, acetic acid, 2-methylbutyric acid and 2,3-dihydroxy-2-methylbutyric acid—never before identified as a structural component of the veratrum alkaloids.

Another new alkaloid, isolated from the mixture remaining after the crystallization of protoveratrine and oxyprotoveratrine X, has tentatively been tagged oxygermatrine W.

Boost: Construction has started on Jefferson Chemical Co., Inc.'s new \$500,000 addition to its Austin (Tex.) research laboratory facilities. Two new buildings are planned. The larger will ultimately provide bench space for about 50 additional chemists; the smaller will augment office and library services. Like their older Austin counterparts, the new labs will be concerned chiefly with petroleum-

based chemicals. Jefferson says its decision to increase research "was based in part on . . . successful introduction of several new chemicals developed . . . during the past year."

Chosen Three: Three major pharmaceutical companies have signed contracts for research on synnematin, an antibiotic discovered in the laboratories of Michigan State Health Department. They are Parke, Davis & Co. (Detroit), Upjohn Co. (Kalamazoo) and Chas. Pfizer & Co. (Brooklyn, N.Y.). Thus far, the new antibiotic has been produced only on a laboratory scale.

Overruled: Despite last-minute efforts by Suffolk County (N.Y.) board of supervisors, which protested in person to Sec. of Agriculture Brannan, U.S. Department of Agriculture is going ahead with construction of its hoof and mouth disease research laboratory on an island off Long Island.



SCINTILLATION COUNTER in the hands of Atlantic Refining Co. researcher is an important aid to a new method of testing adhesion of asphalt to road stone. It's part of Atlantic Refining's tracer research program aimed at the development of better road-building materials. Here's how the new method works: Road stone is

soaked in a solution of radioactive calcium chloride and dried. Stone is then coated with the asphalt preparation, immersed in water for a specified period of time. If the asphalt comes off, the "hot" calcium chloride dissolves in the water. It's determined by evaporating the solution to dryness, testing residue with scintillation counter.

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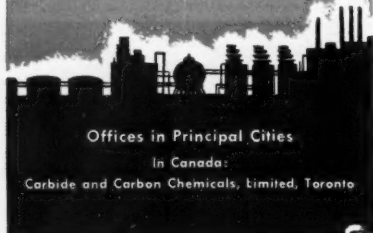
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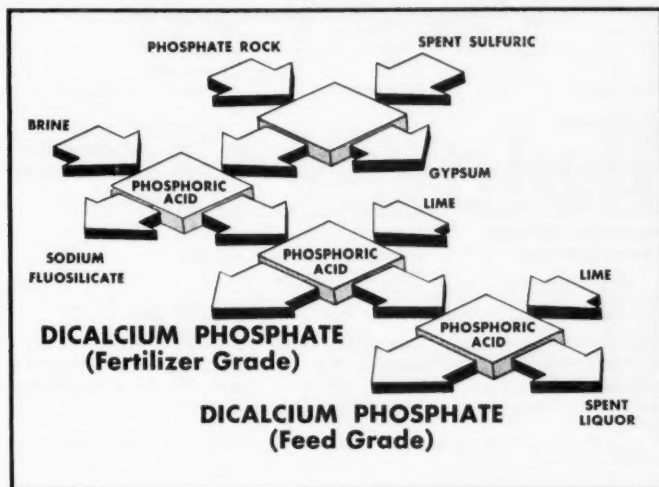
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*Commercial grade is a 70% aqueous solution.

PRODUCTION....



Phosphate in Feed Troughs

Three plants now a-building, one just brought in, another recently expanded.

That's the news on feed-grade dicalcium phosphate. But from the standpoint of processing and economics. . .

Texas City Chemicals will take the biggest step. It will commercialize a new process using wet-process acid.

Making chemicals as feed supplements has turned out to be a profitable piece of business for the chemical process industry. And one of the fastest growing aspects of it is the manufacture of feed-grade dicalcium phosphate. For instance:

- Shea Chemicals is readying a plant in Columbia (Tenn.) to make 75,000 tons a year. Last week, President Shea told CW that it should be in production in "two or three weeks."

- International Minerals & Chemical is building a plant in Bonnie (Fla.) that will turn out 100,000 tons a year. In a recent letter to stockholders, Louis Ware, president of IMC, reports that although the schedule has hit a snag due to delays in equipment and materials, production should start early next year.

- Texas City Chemicals will sink approximately \$7 million in a (Texas City) plant that is expected to go on stream in the second half of '53. Planned annual output: 56,000 tons of the feed-grade material, 15,000 tons of the fertilizer-grade.

Moreover, Monsanto brought in a 30,000-ton-a-year plant in Trenton (Mich.) on Sept. 1. And at its Chi-

cago Heights and Nashville plants, Victor Chemical has recently expanded its dicalcium phosphate feed-grade facilities to handle increased elemental phosphorus production from Silver Bow. Combined capacity of both plants is now 45,000 tons of feed-grade a year.

All this activity adds up to a fine, fat increase in capacity for a product that last year boasted only two prominent producers: Hoosac Valley Lime and American Agricultural Chemical (New York City).

Actually, TVA produced the chemical for a while, but American Agricultural qualifies as the commercial pioneer in the field. Presently, it can turn out 22,000 tons a year, though its production in the past has probably fallen short of that figure.

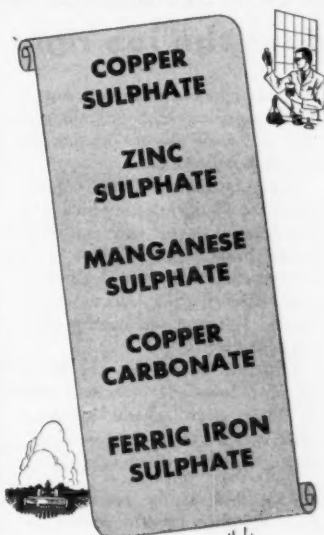
Hoosac Valley Lime has been producing about 25,000 tons a year since 1950. Now Shea—who heads up Hoosac Valley Lime as well as Shea Chemical—has added another string to his bow, for elemental phosphorus production at the Columbia plant will meet both companies' requirements. In the past Hoosac Valley has purchased it from Virginia-Carolina.

Outside of Hoosac Valley and American Agricultural Chemical, the



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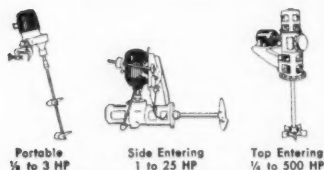
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PRODUCTION

Feed-Grade Dicalcium Phosphate Capacity*

Company	Location	Capacity (tons per year)	Process
In Place:			
American Agricultural Chemical	Carteret, N.J.	22,000	elemental phosphorus
Hoosac Valley Lime	Adams, Mass.	25,000	"
Monsanto Chemical	Trenton, Mich.	30,000	"
Victor Chemical	Chicago Heights, Nashville, Tenn.	45,000	"
On The Way:			
Shea Chemical	Columbia, Tenn.	75,000	"
International Minerals & Chemical	Bonnie, Fla.	100,000	wet process phosphorus
Texas City Chemicals	Texas City, Texas	56,000	"

* Excluding production from by-product gelatin manufacture, about 15,000 tons a year.

principal source of feed-grade dicalcium phosphate in the past—about 15,000 tons—has been as a by-product of gelatin manufacture.

Free of Fluorine: From the standpoint of processing and economies involved, the most significant contribution will be made by Texas City. Actually, the chemistry of all the processes is identical; they all depend on neutralizing phosphoric acid with lime. But for feed-grade purposes, the material must be relatively free of fluorine—and that's the rub. Monsanto, Victor, Shea, Hoosac Valley and American Agricultural Chemical have no difficulties on that score since they use elemental phosphorus, get a phosphoric acid free of fluorine.

Texas City and IMC, however, will use wet-process phosphoric. Just how IMC proposes to by-pass the fluorine problem is a carefully guarded secret. But Texas City will use a Chemical Construction process developed by the latter's W. R. Seyfried.

With spent acid piped in from Carbide and Carbon's near-by plant, Texas City will treat phosphate rock in an agitated digester. Gypsum, which is produced in the reaction, will be filtered off and discarded as waste.

The resulting liquor will run about 22% phosphoric acid. It will be sent to a salting tank where brine is added. After cooling to decrease the solubility, sodium silicofluoride precipitates and is filtered off.

At this point the phosphoric acid still contains appreciable quantities of fluorine, so it will be sent through two liming tanks. In the first almost all the fluorine and about 20% of the dicalcium phosphate should precipitate.

This will be marketed as fertilizer. In the second liming tank, the remaining 80% of the dicalcium phosphate will come down. Since it's expected to contain not more than 0.1% fluorine, it's ideally suited as a feed supplement.

On paper the process looks simple; it's just a combination of standard unit operations. Just how simple it will look in the plant is another question; for experts are quick to point out that the combination has never been tried before on a commercial scale. There is little doubt that the process can be made to work. Many experts, however, look for an extended shakedown period before the process can be controlled to produce the maximum amount of dicalcium phosphate with a minimum amount of fluorine.

The contract between Chemico and Texas City calls for Chemico to build the plant on a cost-plus-fixed-fee basis. It also calls for a successful demonstration run before Texas City takes over the plant. Seyfried, incidentally, inventor of the process, will be Chemico's project engineer on the plant, will then go to work for Texas City as plant manager.

Sulfuric Shuffle: For its sulfuric acid supply, Texas City has made an elaborate agreement with Carbide and Carbon. Here's how it will work:

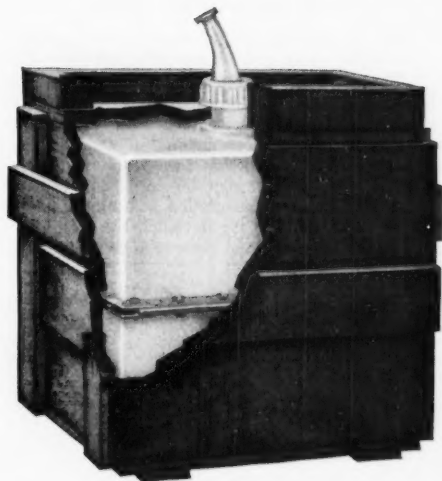
- Texas City will build a sulfuric acid plant to produce approximately 300 tons a day. Up to 250 tons of this will be used to fortify spent acid (80%-94%) from Carbide, which will be sent back to the latter as 98%-100% acid.

- For each ton of acid used to for-

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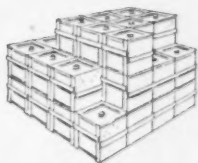
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PRODUCTION

tify the spent acid, Texas City will receive a ton of weak acid (50% minimum) on a 100% sulfuric basis. This weak acid will be used in the dicalcium phosphate plant.

• Texas City will receive payment on a sliding scale for each ton of acid exchanged with Carbide. The scale will range from \$9 a ton for the first 50 tons to \$3 a ton for the last 100 tons per day. In addition, Texas City will supply Carbide with up to 50 tons of fresh acid a day for \$15 a ton.

Rich Return: Capital investment for the Texas City plant appears to be high in comparison with that for a plant working on elemental phosphorus. Shea Chemical, for instance, is building a bigger plant for considerably less money. But all indications are that if the process lives up to expectations, a low operating cost will make it a highly attractive venture.

Based on Chemico's figures, the cost for producing a ton of dicalcium phosphate should be between \$48 and \$52 a ton. Since the fertilizer-grade is a necessary concomitant to the feed-grade, that's an average figure for both. (Currently, the feed-grade commands a selling price of \$92.50 a ton; the fertilizer grade, \$33.32.)

The \$48-\$52 also includes the costs for producing approximately 4,000

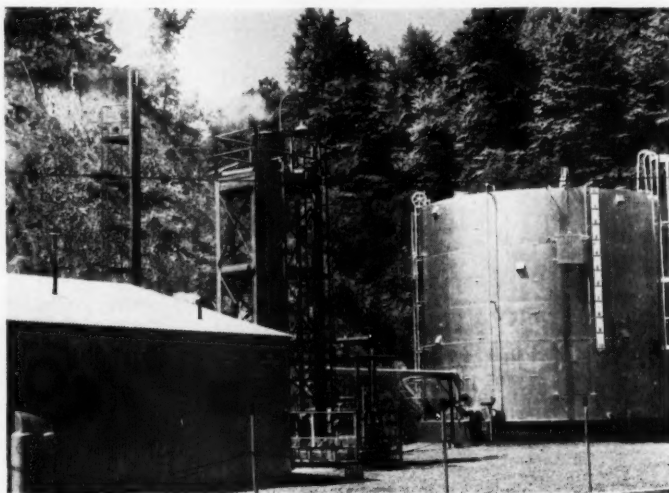
tons a year of by-product sodium silicofluoride that sells for \$140 a ton. At present, the biggest market for sodium silicofluoride is as a sour in commercial laundries (cf. p. 32). And though that outlet is not likely to increase, it has a potentially bright future as a substitute for sodium fluoride in water fluoridation. For the immediate future, however, the consensus is that Texas City may encounter some difficulties in selling all the material.

But it should have no difficulty at all in marketing the dicalcium phosphate. And with an assured income from Carbide for sulfuric acid, the return on investment should be approximately 25% if the required capital doesn't vary by much from Chemico's estimates.

Hydrate By-pass

Hydrazine has zoomed into prominence as a source of rocket fuels and isoniazid, the new TB drug. Now three chemists from the University of Utah have developed a new electrolytic method for making it. Although all their work was done bench-scale, they think it may be suitable for commercial adaptation.

Occasion for unveiling the new process was the recent ACS meeting in



Waste Gas to Captive Sulfur

AT ITS PENN YAN (N.Y.) PLANT, J. T. Baker Chemical Co. has just completed the installation of the pictured sulfur recovery unit. By recovering sulfur from waste gases (principally hydrogen sulfide), the firm expects to produce 1,250,000 lbs. of

sulfur annually for its own carbon bisulfide processing. In the unit, the sulfur in the hydrogen sulfide is catalytically oxidized to hot gaseous elemental sulfur. It's then passed through the scrubber where molten sulfur cools and absorbs it.

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CARDIS* 319	180-185	5-7	4½-6	18-20	65-70	EMULSIFIABLE PETROLEUM WAX
CARDIS* 320	180-185	5-7	4-5	28-30	75-80	EMULSIFIABLE PETROLEUM WAX
CARDIS* 252	195-200	4-6	BROWN	14-16	40-45	SPECIALLY PROCESSED PETROLEUM WAX
FORTEK	190-200	3-5	2½-3½	0.0	0.0	MICRO-CRYSTALLINE HARD AND PLASTIC
MEKON* B-20 A-20 Y-20	190-195 190-195 190-195	3-5 3-5 3-5	BROWN-BLACK AMBER-6 MAX. YELLOW-3-3½	0.0 0.0 0.0	0.0 0.0 0.0	MICRO-CRYSTALLINE HARD AND BRITTLE
WARCO WAX 180	180-185 180-185	4-7 4-7	WHITE BROWN	0.0 0.0	0.0 0.0	MICRO-CRYSTALLINE HARD AND BRITTLE
WARCO WAX 150-A	145-155 145-155	15-20 15-20	YELLOW 1-2 BROWN	0.0 0.0	0.0 0.0	MICRO-CRYSTALLINE PLASTIC
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PARAFFIN	131-133	FULLY REFINED				CRYSTALLINE
SUGAR CANE WAX	174-178	3 MAX	TAN	23-28	65-77	VEGETABLE WAX

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PRODUCTION

Atlantic City. University of Utah's Bruno Zwolinski presented the report for his colleagues, Hoyt Andersen and Ransom Parlin.

Same Start: Like the chemical conversion processes for hydrazine, the electrolytic process starts with ammonia. (Urea is also used commercially.) The trouble with the older methods, explained Zwolinski, is that they produce hydrazine hydrate, and transforming it to an anhydrous product is an expensive proposition. With their electrolytic method, the three Utah chemists turn out a water-free product directly.

They employ a high frequency—rather than a dc—discharge in order to keep thermal effects to a minimum. They found that high flow rates through the discharge tube, small discharge currents, low pressures and small electrode gap distances favored yields in terms of energy dissipated.

The Utah researchers were able to get yields of 4 to 6 grams of hydrazine per kwh of energy dissipated in the discharge tube. They feel the yield can be hiked under optimum operating conditions.

Says Zwolinski: "The commercial preparation of hydrazine from ammonia by electric discharge appears feasible from an economic point of view if the cost of hydrazine continues to be as high as it is today." He is quick to point out, however, that it will take a lot of engineering to move the process to anything approaching a commercial scale.

EQUIPMENT

Switch to Stand-by: General Electric (Schenectady, N.Y.) is introducing an automatic throwover panel to transfer electric circuits to a stand-by source when the normal source fails. Designed for lighting, regulating or metering systems, fire protection controls, etc., the G.E. control is said to provide maximum protection against moisture and mechanical damage.

New Office: CEC Instruments, Inc., a subsidiary of Consolidated Engineering Corp., has opened a new office in New York City. The firm offers services and sales for the parent company's line of analytical instruments.

Plastic Gain: Dow Chemical (Midland, Mich.) reports it has a new rigid thermoplastic sheet, Styron 475 Sheet, in commercial production. Big feature of the new material says Dow, is that it simplifies the manufacture of large-area parts at high speed in low-cost equipment.

Chemical Week • October 4, 1952

PRODUCTION.

Photoelectric Control: Photoswitch, Inc. (Cambridge, Mass) has brought out Series 20 and 21 photoelectric controls. Recommended by the manufacturer for counting, conveying control, other applications, the new controls are said to be capable of withstanding high temperatures and high humidity.

New Thermocouple: Minneapolis-Honeywell Regulator Co. (Philadelphia) is now selling a Type J thermocouple assembly. It's designed for the precision detection of temperatures in masses as small as plastic molds of two ounces. Although the new assemblies are aimed for application in plastic injection or extrusion processes, the firm points out that lack of a sufficiently compact instrument has hampered production in other industries.

Plastic Patches: Latest techniques in patching steel pipes with plastic are reported in the September issue of the "Technical Report Newsletter," just released by the Office of Technical Services. Single copies are available—without charge—from the Office of Technical Services of the U.S. Department of Commerce in Washington and from Commerce field offices.

End Point Control: Minneapolis-Honeywell Regulator Co. (Philadelphia) reports it has developed a new cut-off relay. It's designed to give end-point temperature control on processes that require automatic shut-downs and manual resettings. Capacity: 13 amps at 115 v; 6.5 amps at 230 v.

Boiler Burners: The Kewanee-Ross Corp. (Kewanee, Ill.) and the Iron Fireman Manufacturing Co. (Cleveland, Ohio) have undertaken a joint project to manufacture and market a complete line of boiler-burner units. Each unit consists of an Iron Fireman package burner and a Kewanee Scotch boiler, both complete with all necessary auxiliary equipment. They are available for high-pressure steam and water in sizes ranging from 52 to 304 hp, 125 and 150 lbs. working pressure. They are also available for low pressure (15 lbs. steam or 30 lbs. of water) in sizes from 1,808,000 btu to 8,400,000 btu.

Maintenance Meeting: Plant maintenance in the chemical industry will come in for a big discussion at the Plant Maintenance Conference in Cleveland, Jan. 19-22. Two sessions will be devoted exclusively to that subject.

October 4, 1952 • Chemical Week

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Chemical analysis of water below:

GRAINS PER U. S. GALLON

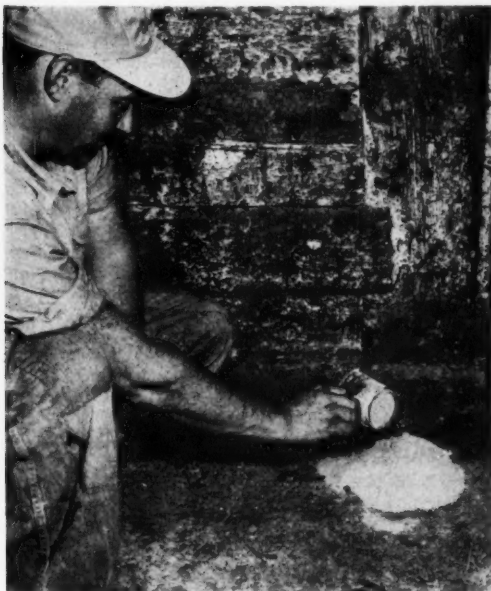
SiO ₂	R ₂ O ₃	Ca	Mg	Na	HCO ₃	SO ₄	Cl	NO ₃	CO ₂	OH	PO ₄	Free CO ₂
.4	.1	2.3	.2	.26	8.0	.2	.2	Tr.		—	— ppm	ppm
PROBABLE COMBINATIONS GRAINS PER U. S. GALLON												
Silica					.397							.073
Iron and Aluminum as Oxides					.116							.351
Calcium Carbonate					5.840							.300
Calcium Chloride												
Calcium Sulphate												
Magnesium Carbonate					.671							Trace
Magnesium Sulphate												
Magnesium Chloride												.168
Total Incrusting Solids					7.024							.892
"p"					Trace (as CaCO ₃)							7.916
"M"					6.7							.700
"OH" (Winkler)					None							
"H"					6.6							
pH					8.0							0.2 ppm
DESCRIPTION: Colorless, cloudy, light suspension. Filtered — Colorless, clear.												

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TOLL COUNT: 100 million rats can't be wrong.

One More for the Rat

Latest word in rodenticides: Pival, now-testing anticoagulant that bids to match Warfarin as an ace rat-killer.

Warfarin, with a likely $1\frac{1}{2}$ million pounds of concentrate moved since its introduction two years ago, and sales boosted by the recent water-soluble form, has a firm grip on the rodenticide market at present.

But the market is ample yet; perhaps only one-fifth of the U.S. market has been tapped, and foreign outlets beckon.

Warming up to give Warfarin a run in the rodenticide race is Pival, a new anticoagulant rat-killer. It still has only experimental U. S. Department of Agriculture registration, but tests look good enough to spur Motomco, Inc. (New York), sole seller now, into starting commercial production.

Pival, testing now as both a dry-bait concentrate and a water-soluble sodium salt (Pivalyn), has been hinting a number of valuable plus factors as a rodenticide. Among advantages of the 2-Pival-1, 3-indandione compound that Walter Dykstra of the U. S. Fish and Wildlife Service terms "intriguing possibilities":

- Insecticidal qualities of Pival keep bait insect-free for long periods of time, both on the dealers' shelves and where the rats get it. Water-soluble types don't foul or slime easily.

- Roach-killing properties, in addition to rodenticidal characteristics, have been noted in some tests.

- Ectoparasitic ability has turned up in some cases—i.e., the typhus-carrying body lice that suck the rodent's blood are knocked out.

But until Pival is fully consumer-available, it looks as if Warfarin has the U. S. rodenticide market pretty well in hand. With a domestic farm demand for rat-killers roughly at 6 million pounds,* Warfarin has already grabbed off at least a fifth of that. And Warfarin has recently been enhanced in effectiveness and sales appeal by development of the water-soluble Warfacide.

Replay for Pival: Despite its novelty as a rodenticide, Pival is not,

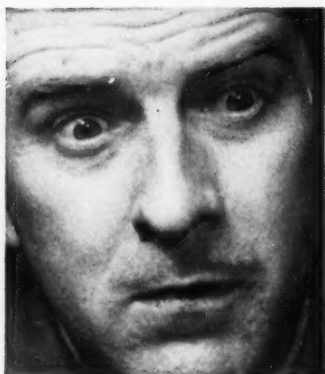
* For the concentrate, which is 0.5% active ingredient in case of both Warfarin and Pival.

strictly speaking, brand-new. It caught attention in 1944 as an insecticide. But it was somewhat toxic for widespread general use, and lost out to DDT. Only recently has interest swung sharply to its rodenticidal properties.

In contrast to many of the present rat-killers, such as Warfarin, and Tomorin (The Geigy-developed product that is enjoying good European sales, and may be sold soon in this country [CW, Mar. 8], Pival is not a dicoumarol. The dicoumarols—Warfarin is 3-(γ -phenyl- β -acetylenyl)-4-hydroxycoumarin; Tomorin, the similar 3-(γ -p-chlorophenyl- β -acetylenyl)-4-hydroxycoumarin; and compound 63 is 3,4-(2-methyl-2-methoxy-4'-phenyl) dihydropyranocoumarin—have been the basis of numerous rodenticides, such as the British Sorex-A and the German Actosin. All these anticoagulants, however, give a slow kill; it's only after ingesting the poison for about 5-6 days that the rat literally eats itself to death.

Underfoot: In Europe, the anticoagulants are sometimes used as tracking powders. Sprinkled in the rat runs, the compound is picked up by the animal's feet, and transmitted to the blood stream when it scratches itself. Tracking powders are frowned on in this country, since there is danger of food contamination.

The water-soluble formulation can't



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SPECIALTIES

be used in tracking applications. They do offer some advantages, some drawbacks. On the plus side, they give a better chance at rats where there is an abundance of food, and the rats have no desire for bait, and they seem to kill somewhat quicker. The use now of the soluble Warfacide is in grain and cereal mills and storage units.

Super Merchants: All the current production of Warfacide is going into the products of d-Con Co., Inc. d-Con, a Chicago firm dealing in insecticides and rodenticides, has been one of the wonders in the chemical specialties field; in the first year of its existence it grossed \$4 million sales. It has poured on a terrific campaign for its Warfarin-based rat killer, and some guess it has better than half the total sales of Warfarin rodenticides—and there have been as many as 300 formulators trying for the business.

Though d-Con handles all the Warfacide now, it is because the maker, S. B. Penick, working under license from the Wisconsin Alumni Research Foundation, has experienced production problems, and d-Con has contracted for all the material that Penick can turn out.

The heavy promotion of Warfacide has created a big demand despite the admitted drawbacks of the soluble kinds—drawbacks that will apply to Pivalyn too: The poison containers may freeze in the winter; there is a certain amount of bait-shyness; it is difficult to keep dogs and farm animals from drinking poisoned water.

Down But . . . Warfarin has now so firmly taken hold in this country that the old standbys are seldom used. Red squill, long a leading rat killer, has dropped to only slight use; Antu, the wartime-developed poison, cannot match the advantages of the anti-coagulants.

The Monsanto-produced 1080, sodium fluoroacetate, remains an effective rodent weapon, but its use is extremely limited. It is one of the deadliest poisons to animals known. Extreme precautions must be taken with it, and it should be handled only by experienced operators.

Since Karl Paul Link worked out his Compound 42, which is now termed Warfarin, the anticoagulants have given the pest-control operator and the public in general a product that may reduce its own market to practically nothing. Warfarin, though not as effective with mice as it is with rats, has cut the rodent population in some cities to literally nothing. It is foolish to predict elimination of

rats, but there is almost no continued sale of these rat killers in cities where there has been an extensive rodent control campaign—there aren't enough rats.

Farms require the major part of the rodent removers. It was felt initially that the farmer would prefer to buy the poison concentrates rather than a prepared bait. But indications are that the ready-mixed material outsells the concentrate nearly ten to one. That gives the formulator a better profit chance, and some of them cash in additionally with special rat-feeding stations, like the Prentiss-sold De-ratter.

Since Warfarin hit the market, an estimated 75-100 million rats have been killed in America. The rodents are far from wiped out, though, and the estimated 400 million left should make a tidy market for all rodent killers from red squill to Pival.

Glamorene Grows Up

Early this year the specialty rug cleaner Glamorene was given the boost of a Reader's Digest Report to Consumers. The spurt in sales at the time led maker Jerclaydon, Inc., to hope for \$4 million sales this year (CW, Feb. 23). It panned out even better.

According to a recent story in *Tide** (Sept. 19) sales for the first eight months of this year have totaled \$11.4 million, and Jerclaydon is currently selling \$125,000 worth a week. But spectacular as the growth has been, it hasn't been without its complications and difficulties.

As was indicated when CW surveyed the rug cleaner situation, prime opposition to the home-type products comes from the professional rug cleaner. Ace card for the professionals was a report that Glamorene use caused the death of one man—a report that was later proved baseless.

Stumbling block: Nevertheless, word of the supposed Glamorene-caused fatality continues to crop up, still plagues Glamorene salesmen.

It began May 1 of this year, when a San Francisco coroner's report blamed the death of a Pan American World Airways employee on the trichlorethylene in Glamorene. Papers boomed the story, radio spots warned the public about the "hazard," health officials halted sales throughout the city. Jerclaydon, its staff stunned by the news, rushed a crew to San Francisco to see just what had happened. Essentially, it was this:

* Newsmagazine of sales and advertising.

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New edition of a widely-used manual showing step by step and plainly how to write the kind of technical reports that are clear and easy to read and will win acceptance for your ideas. It tells you how to analyze the type of report, how to choose the best form and style, how to organize the material, and how to use figures, tables, and annotations. By J. Raleigh Nelson, Professor Emeritus of English in the College of Engineering, University of Michigan. 3rd Ed. 356 pp., \$4.50.

AIR POLLUTION

Proceedings of the United States Technical Conference on Air Pollution

A systematic presentation of useful information on air pollution; its effect on human, plant, and animal life; the measures being taken to control it; and the legal and administrative problems which are being overcome connected with pollution prevention and control. Contains detailed analyses of different contaminants; describes latest equipment used, etc. Sponsored by the Interstate Comm. on Air Pollution. Chairman: Louis C. McCabe, Chief, Office of Air and Stream Pollution. 847 pp., \$12.50.

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Covers the principles and practices of reactions in organic synthesis, recording their development in terms of underlying unit processes. Deals with nitration, amination by reduction, halogenation, sulfonation, oxidation, hydrolysis, etc.—systematically discussing the factors and fundamental principles concerned in each. Fully revised to keep pace with chemical and chemical engineering advances . . . gives increased attention to developments in kinetics and thermodynamics. Some of the new material is based on actual German factory operations. Ed-in-Chief, P. H. Groggins, Bu. of Agricultural & Indust. Chem., U. S. Dept. of Ag. Washington, D.C. 4th Edit., 937 pp., over 200 illus. and tables, \$12.50.

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SPECIALTIES

A Pan Am employee had been cleaning upholstery, apparently using Glamorene; he became ill and later died. The attending physician reported the cause as carbon tetrachloride poisoning . . . the death certificate used the phrase "death due to halogenated hydrocarbon poisoning." On May 1, the coroner's inquest concluded that the "25%" trichlorethylene, a "very toxic hydrocarbon," in Glamorene, caused the death. After getting the story to the newspapers, the coroner notified the city health director, who, as a precaution, issued the halt order.

The health director, however, investigated further, and on analyzing Glamorene, withdrew his objections to sales and distribution of it, and publicly said so. Jerclaydon advertised the change in policy widely as did at least one of the firms retailing the cleaner, but the damage had been done. Jerclaydon, with the help of the National Better Business Bureau, and the York Research Labs (representing *Reader's Digest*) decided to investigate the matter more completely. The eventual conclusion: That there was little conclusive evidence that trichlorethylene had caused the death; that there was no real evidence that Glamorene was being used at the time; and that the actual cause might have been carbon tetrachloride, which Pan Am used in open buckets to clean planes.

Slow Dying: The story of the death has been slow to fade out, however, and one reason may be the action of the National Institute of Rug Cleaners, says *Tide*. The NIRC sent a flash bulletin to its members reporting the original fatality story, and has not, reportedly, sent out a follow-up on the final findings. And just recently, another Pan Am employee, who had been working with the one who died, sued Jerclaydon for \$100,000 (although he had waited six months to take the action, and had apparently missed only three days work).

Jerclaydon, selling about \$40,000 worth of Glamorene per month less than a year ago, whipped into national distribution in 21 short days, and now boasts of monthly sales close to \$125,000. It may have had its headaches, but it sold 3 million gallons.

Restructured, New Uses: Modified 2,4-D, the herbicide, has been found to improve growth characteristics of certain tomato plants.

The modification of the 2,4-dichlorophenoxyacetic acid structure is done with certain amino acids; the tomatoes treated with the new chemical appear

to develop without pollination, produce a high quality tomato of increased size.

Filed tests are being carried on by the USDA, at Beltsville, Md., where J. W. Wood, T. D. Fontaine, J. W. Mitchell and Paul Marth worked out the new 2,4-D form.

Pacific Plant: New plant for manufacture of metal-working chemical and agricultural chemical has been acquired by the American Chemical Paint Co. (Ambler, Pa.). Facilities, at Niles, Cal., are expected to be in production by November.

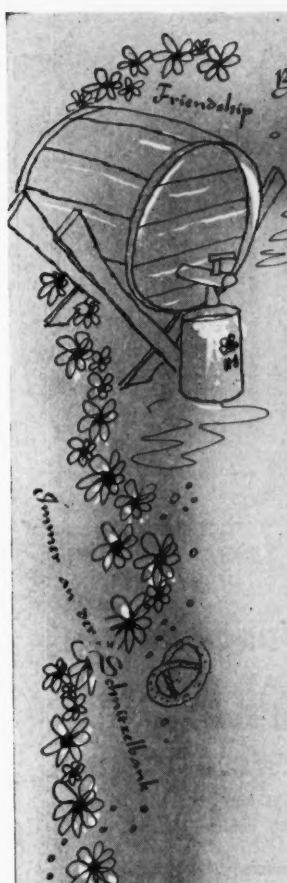

Bedsread Special: A new \$150,000, 12,000-sq.-ft. plant has been opened at Dalton, Ga., by the Farm and Industrial Chemical Co. of Atlanta. The plant's 16,000 gal./day production of liquid bleach will be used in the Dalton area chenille mills—the nation's bedsread basket.

Anderson Enlarges: William G. Anderson, Inc. (Dallas, Tex.), makers of the all-purpose cleaner Kwik Kleen, has just moved to a larger plant. Product is slated for national distribution next year.



Transplanting Tricks

VERMICULITE is the latest product to be tagged as a "soil conditioner." Chicagoan Harry Dresser finds its porous nature enables the roots of transplanted shrub to take hold easily in hard soil. Ever since "soil conditioner" became a household term, dozens of products have been tagged as "conditioners"—much to the annoyance of makers of chemical conditioners.

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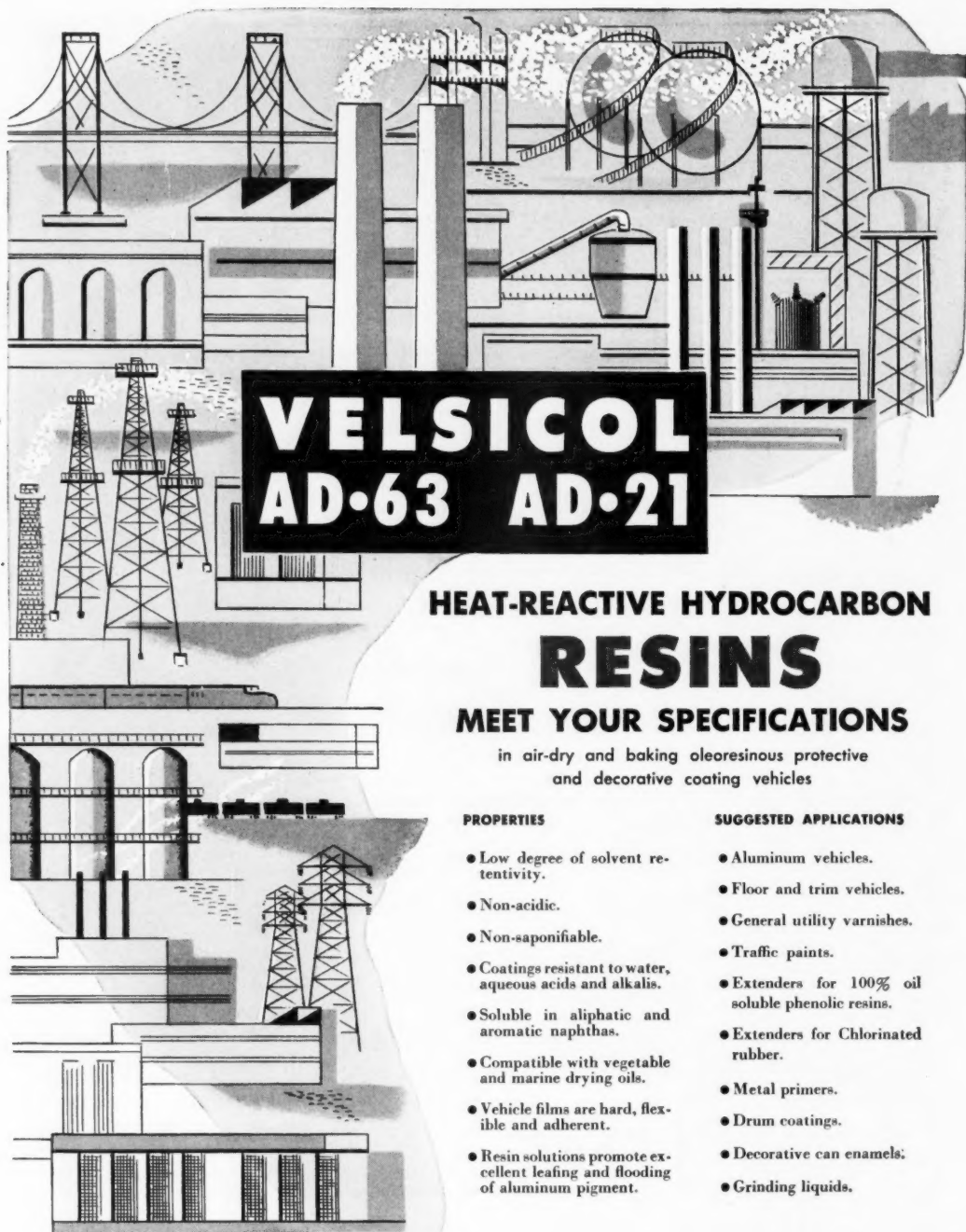
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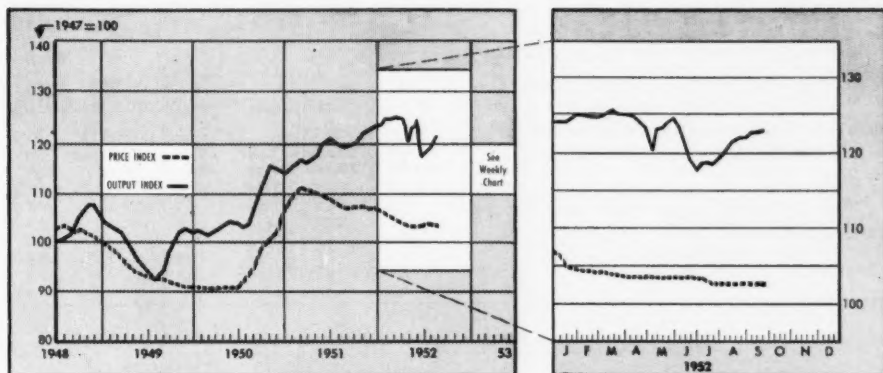


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MARKETS



CW Index of Chemical Output—Basis: Total Man Hours Worked in Selected Chemical Industries
CW Price Index—Basis: Weekly prices of sixteen selected chemicals

MARKET LETTER

OPS has not closed up shop by a long shot—yet—but this much is becoming increasingly clear: Prices of chemical commodities are being “controlled,” more and more, by good old-fashioned “free economy” competition in the CPI marketplaces.

For instance the lower prices being sported this week by butyl alcohol and butyl acetate have nothing to do with bureaucrats, but simply reflect producers’ vying for consumers’ interest.

The latest reduction brings the prices for both items to 13¢/pound (tanks); 14 $\frac{3}{4}$ ¢ (c.l.); 15 $\frac{1}{2}$ ¢ (l.c.l.).

At least one butyl maker (via the fermentation alcohol route) is not happy about the cuts. Only this month the company resumed production of the two products after an eight months or so layoff. Reasons: for the shutdown: high price grain, the then raw material; for the re-entry now—lower priced molasses.

Molasses, now moving slowly at 7¢/gallon, f.o.b. Cuba, may drop to a low 4¢ within the next few months. Supply/demand at work again.

The Cubans are in a spot. U.S. consumers adamant in their refusal to pay high prices the Cubans demanded (originally asking 20¢/gallon) have touched very little molasses.

Result: Cuban surplus will amount to more than 250 million gallons this year. Add to this the expected new crop—about 250 million; plus Louisiana molasses due in the next three months—some 35 million; plus new crops from Santo Domingo, Mexico, Puerto Rico, Hawaii, and you wind up with about 650 million gallons.

The feed supplement market probably cannot take more than 300 million gallons of molasses of which 200 million will be imported; Cuba will consume locally about 80 million gallons. Hence next summer should see another whopping 300 million gallons of molasses on the market—a repeat performance of this year’s sluggish situation—unless fermentation consumers’ requirements take a big leap in early 1953.

One major ethyl alcohol-from-molasses producer is crying “enough,” will step out of the fermentation ethanol picture before next summer. Plans in the works, however, will assure customers’ supplies through upcoming shipments will be synthetic.

Prices for both fermentation, synthetic alcohol are being shaded. A few spot lots may be had for about 46¢-48¢/gallon.

MARKET LETTER

WEEKLY BUSINESS INDICATORS

	Latest Week	Preceding Week	Year Ago
CHEMICAL WEEK Output Index (1947=100)	122.8	122.6	121.5
CHEMICAL WEEK Wholesale Price Index (1947=100)	102.4	102.5	107.2
Bituminous Coal Production (daily average, 1,000 tons)	1,922.0	1,975.0	1,833.0
Steel Ingot Production (1,000 tons)	2,153.0 (est.)	2,160.0	
Stock Price Index of 14 Chemical Companies (Standard & Poor's Corp.)	241.4	240.0	256.5
Chemical Process Industries Construction Awards (Eng. News-Record)	\$4,705,000	\$10,040,000	\$95,192,000

MONTHLY INDICATORS—FOREIGN TRADE (Million Dollars)

	EXPORTS			IMPORTS		
	Latest Month	Preceding Month	Year Ago	Latest Month	Preceding Month	Year Ago
Chemicals, total	\$60.3	\$65.5	\$89.6	\$15.1	\$19.5	\$21.9
Coal tar products	3.3	3.8	6.6	3.9	4.3	4.8
Medicinals and pharmaceuticals	6.2	20.1	26.3	.7	.5	1.1
Industrial chemicals	9.5	9.8	16.9	3.2	4.5	8.6
Fertilizer and fertilizer materials	4.1	2.5	4.4	6.6	9.5	6.4
Vegetable oils and fats, inedible	3.1	2.7	12.0	6.5	9.4	5.8

Though liquid urea formaldehyde resin prices are down to a low 81¼¢/pound (T. C. 65% solids), at least one producer is optimistic about the future.

Borden Chemical will go ahead with plans for manufacturing the resin at its Union, Ill., plant. Competition for the large midwestern wood and furniture market has been keen, with some producers making bids via lower prices.

Tricresyl phosphate users, too, are finding things a little easier. Last week's price cut (2¢/pound) establishes the price at 33¢ (T. C.).

The reduction clearly reflects the softening domestic cresylic acid market. Importers also report little or no activity in their field.

But there's no slow-down in fertilizer production. USDA predicts supplies for 1953 crops will be about 12% greater than quantities available during 1951-1952.

Here are comparisons for the three primary fertilizer elements:

	1952	1953	% increase
Nitrogen	1,425,000	1,585,000	11
Phosphates	2,235,000	2,465,000	10
Potash	1,585,000	1,850,000	17

The zinc market, as indicated here last week, is far from stable. In fact, the current situation has all the earmarks of a small price war.

Some sellers cut the price from 14½¢ pound to 14¢; others came back with a further drop to 13½¢. However, while some customers are temporarily stepping out of the market—waiting for clarification—the government is stepping in, picking up some bargain tonnages for next year's stockpile.

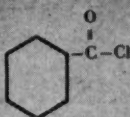
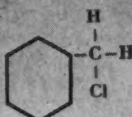
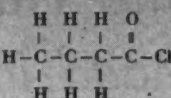
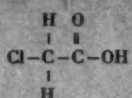
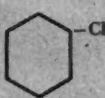
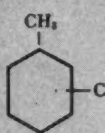
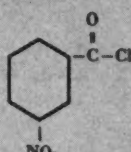
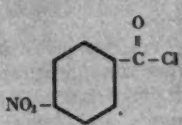




If you follow CW's market charts you'll be interested in this bit of background information about the new price index. During the last thirty weeks or so the line has moved within a very narrow range—about 1%.

The price index is running about 5%-6% below last year's figures, but chances are it will be somewhat higher by year's end than the current level.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending Sept. 29, 1952

UP	Change	New Price	Change	New Price
Superphosphate, triple, per unit a.p.a., E. Tampa, Fla.	\$.04	\$.91		
DOWN				
Zinc, prime western	\$.005	\$.135	DDT, fibr drms., c.l.wks., frt. equald.	\$.01 \$.32

All prices per pound unless quantity is stated.

			$C_{12-6}H_{26-2}Cl$ (average)	
BENZOYL CHLORIDE	BENZYL CHLORIDE	BUTYRYL CHLORIDE	LAURYL CHLORIDE	MONOCHLOROACETIC ACID
		HCl in water solution		
MONOCHLOROBENZENE	MONOCHLOROTOLUENE	MURIATIC ACID	m-NITROBENZOYL CHLORIDE	p-NITROBENZOYL CHLORIDE
				
SULFUR DICHLORIDE	SULFUR MONOCHLORIDE	SULFURYL CHLORIDE	THIONYL CHLORIDE	

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October 4, 1952 • Chemical Week

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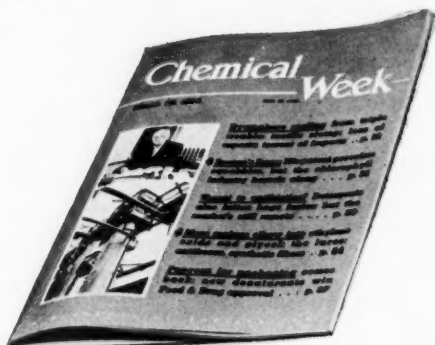
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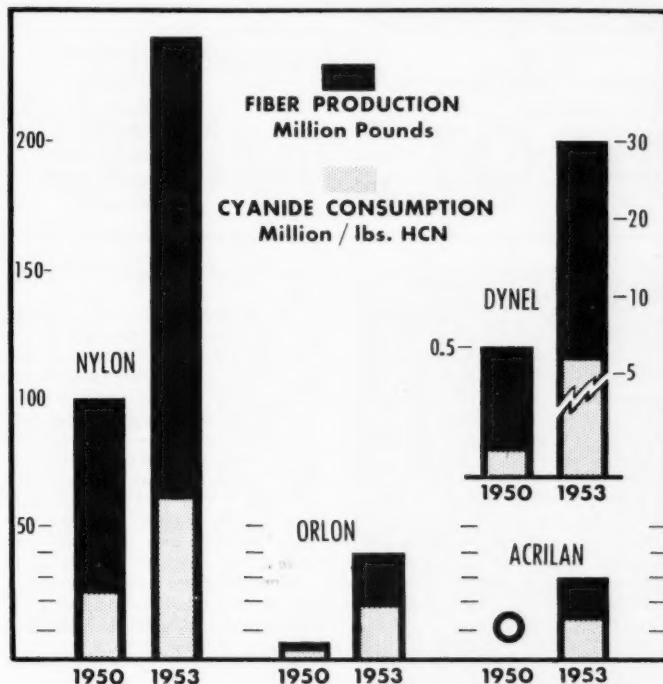
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MARKETS



Behind the Cyanide Boom

Cyanide production will boom next year as nylon, acrylic fiber demands gobble more acrylonitrile, adiponitrile.

An estimated 340 million pounds of nylon, Orlon, Acrilan, dynel will account for a nearly fourfold increase in cyanide consumption in 1953 over 1950—28.1 million vs. 100 million pounds.

While the spotlight of public attention is focused on synthetic additions in the textile field, not a few chemical process people are vitally concerned with the basic raw materials needed to underpin the burgeoning. Hydrogen cyanide, one such material, is a basic chemical for both acrylonitrile and adiponitrile.

Acrylonitrile production is due for a whopping expansion to meet demands for use in Orlon, Acrilan, dynel; adiponitrile, important intermediate in the production of nylon, will likewise have to boost production if there is to be enough for the 240 million pounds of nylon expected to be made in 1953.

Essentially, any expansion in these man-made fibers must hence stem from an increase in cyanide production.

About three years ago the two primary producers, American Cyanamid

and Du Pont, turned out a total of less than 40 million pounds (expressed in terms of hydrogen cyanide), the former accounting for about 75%. Pittsburgh Coke and Chemical in that year recovered less than a million pounds from coke gases.

Today three more producers—Carbide and Carbon, Rohm & Haas, Koppers—are helping to produce an industry total of almost 100 million pounds HCN or equivalent. And industry sources predict that with the addition of Monsanto later this year, 1953 production could conceivably reach a staggering 190 million pounds.

Fibers First: In the past plastics and elastomers have been the biggest outlets for cyanides. As recently as 1950, nearly half of the total cyanide output was consumed in the manufacture of GR-N and acrylate polymers. However, demands for synthetic fibers will

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THE MAN WE MEAN IS A COMPOSITE of the editorial staff of this magazine. For, obviously, no one individual could ever accomplish such a vast business news job. It's the result of many qualified men of diversified and specialized talents.

AND, THERE'S ANOTHER SIDE TO THIS "COMPOSITE MAN," another complete news service which complements the editorial section of this magazine — the advertising pages. It's been said that in a business publication the editorial pages tell "how they do it" — "they" being all the industry's front line of innovators and improvers — and the advertising pages tell "with what." Each issue unfolds an industrial exposition before you — giving a ready panorama of up-to-date tools, materials, equipment.

SUCH A "MAN" IS ON YOUR PAYROLL. Be sure to "listen" regularly and carefully to the practical business information he gathers.



McGraw-Hill Publications

MARKETS

Company	1953	Major outlet
	Cyanide capacity	
Monsanto Chemical (Texas City)	35	Acrylonitrile
Du Pont (Memphis)	35	Adiponitrile, sodium cyanide
Du Pont (Victoria, Tex.)	30	Adiponitrile
Rohm & Haas (Houston)	20	Acrylate esters
Carbide and Carbon (Institute, W. Va.)	13	Acrylonitrile

—by the end of 1953—usurp the top consumer spot.

The accompanying charts graphically portray the dizzying growth since 1950 of the man-made hydrophobic fibers, and the concomitant increasing need for cyanide.

Production of Du Pont's nylon reached 100 million pounds in 1950; by 1953 output will increase to about 240 million. Chemstrand (licensed by Du Pont to produce nylon) will contribute some of that 1953 total; will then begin producing staple and filament at about a 50-million-pound-a-year clip. Thus nylon alone may take about 40% more cyanide next year than it did in 1950.

More Du Pont expansion will boost production of Orlon (largely polyacrylonitrile) from a scant 6½ million pounds to nearly 40 million pounds next year—almost a sevenfold expanded cyanide market.

Chemstrand's Acrilan staple—just in development in 1950 — will, by next year, be produced at an annual rate of about 30 million pounds. As the Acrilan chart shows, this production will take approximately 13 million pounds of HCN.

Carbide and Carbon's current expansion plans should boost its dynel staple capacity to 30 million pounds in 1953 as compared with a drop-in-the-bucket half million pounds in 1950.* another 6 million pounds/year outlet for cyanide.

All in all, these four synthetic fibers—nylon, Orlon, Acrilan, dynel—will probably consume about 100 million pounds of cyanide by the end of next year, compared with the shade more than 28 million pounds that went into fibers during 1950.

Assured Sources: And where will all the cyanide come from that will be needed to make the acrylonitrile and adiponitrile, which in turn will be called for by the increased synthetic fiber demand?

At the moment there are four major sources of cyanide: natural gas, so-called black cyanide (imported from

Canada), sodium cyanide and formamide.

Of the four, natural gas material has skyrocketed to the top of the heap. In 1950, only 7 million pounds of cyanide were produced from the hydrocarbon (usually methane) and ammonia process: By 1953 more than 130 million pounds will be made by this method. Above is an estimated capacity breakdown by company and amounts — expressed as millions of pounds of hydrogen cyanide—to come from methane and ammonia (see table at top of page).

More and More: In addition there is a strong possibility that American Cyanamid's multimillion dollar plant now a-building at New Orleans may very well go the methane and ammonia route. But its Warners (N.J.) plant will produce about 33 million pounds of cyanide next year utilizing the black cyanide it imports from its Canadian plant. This production goes into HCN, acrylonitrile, prussiates, cyanuric chloride, and other organic nitrogen compounds.

Another 40 million pounds of cyanide from Du Pont's Niagara Falls plant will find its way into adiponitrile for nylon and other uses for sodium cyanide (metal treating, electroplating, etc.).

Dehydration of formamide is the route currently being used at Du Pont's Belle (W. Va.) plant to turn out cyanide. By 1953 this plant should produce about 6 million pounds, most of which will go into methacrylate esters.

The only other domestic source for hydrogen cyanide is the comparatively small amount recovered from coke-oven gas. Two producers—Koppers and Pittsburgh Coke and Chemical—account for a total of somewhat less than 3 million pounds a year.

No matter how you look at it, this much is certain: The established synthetic fibers—and others still in the works—will create a greater and greater demand for cyanide. But judging by the huge expansions under way, the supply of cyanide will be ample enough to meet the demand—certainly for next year.

* The President's Materials Policy Commission Report lists dynel production in 1950 as 5 million pounds. CW learns this figure should have read 0.5 million.

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PROBLEM...

... only *one-half* of all American citizens eligible to vote in the 1948 presidential election actually went to the polls. Just 51.2 per cent, to be exact.

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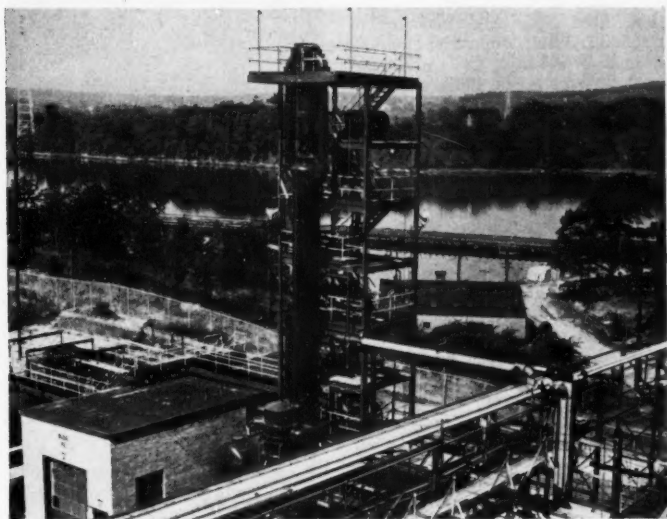
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DOW CHEMICAL

Half Better than None

BEHIND THE TOWER of Dow's new polystyrene plant at Allyn's Point, Conn., stretches the Thames River, winding its way north from the Long Island Sound port of New London. This week or next the *Marine Chemist* will point its bow up the Thames channel for the first time, bringing to the Allyn's Point plant its initial seaborne shipment of styrene from Freeport, Texas. Sparked by this raw-material receipt, Dow hopes to have its polymerization process in full operation by the middle of this month.

The aerial view below shows the neat arrangement of ship's pier, storage tanks, and process plant. But a major stumbling block still lies in Dow's path: the shallowness of the Thames River itself. Normally loaded, the *Marine Chemist* draws 29 feet of water. The channel up to Allyn's Point, however, is only 24-25 feet deep. Despite repeated appeals to the Corps of Engineers office in Boston, little if any relief is expected in the near future.

To get around this problem, the present plan is to split-load the vessel

in Texas and to partially unload it at New Jersey ports before tackling the Thames. Most of the trip will thereby be under full load (10,000 tons). By the time *Chemist* drops off shipments of such products as carbon tetrachloride and liquid caustic at Carteret or Paulsboro, N. J., she will be 6,000 tons lighter and draw only 22 feet. Of the balance remaining in her holds, about one half will be styrene, the rest ballast to maintain the ship's trim.

This will call for some close scheduling by Dow's traffic men, but they are confident that, despite the shallow Thames, they can keep the Allyn's Point plant well supplied.

Federal Labels

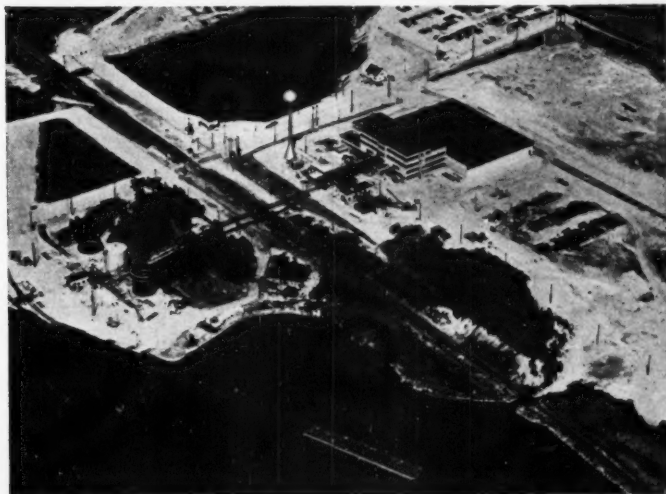
For members of the MCA committee on Labels and Precautionary Information, nationwide uniformity on label regulations is a consummation devoutly to be wished. Independent actions by the individual states is causing a welter of confusion (CW, Aug. 2).

But help is now on its way. The Federal Security Agency is reactivating a Public Health Service committee to work on the problem. The first step has been to discontinue the so-called "Surgeon General's Agreements" with the manufacturers of certain chemicals having toxic fumes. Future activities will be in concert with those of the MCA committee, which has the endorsement of the Public Health Service. Apparently MCA's Manual L-1 will continue as the key labeling bible.

• **Group Exports:** Nine manufacturers of tall oil, tall-oil derivatives, and kraft paper have formed an export trade association under the Export Trade Act. The name of the new organization will be the Kraft Products Manufacturers Export Association with headquarters in New York.

• **Going Commercial:** The Rohm and Haas Co. has added another member to its family of cyanohydrins. Available now in commercial quantities is glycolonitrile—a clear, light-yellow liquid. It can be used as a convenient method of cyanomethylation with a single reagent. It also has been used as a solvent for polyacrylonitrile.

• **Pier Permit:** American Cyanamid has asked permission of local authorities for the construction of a 100-foot pier with a 325-foot runway at its Georgetown, S.C., aluminum sulfate plant. The Sampit River installation would be of the pile and timber type.



DOW CHEMICAL

Non-Salesmen Sold on Selling

The importance of the market place in the total industrial-chemical scene has been sharply pointed out by actions on the part of two scientific and engineering organizations during the last couple of weeks. They add up to a renewed reminder that bench-bound chemists and slide-rule engineers must always keep half an eye cocked at what's happening on their companies' selling front.

Item one: The American Institute of Chemical Engineers, meeting in Chicago, included in its agenda a down-to-earth symposium on selling problems. Item two: A few days later, in Atlantic City, the American Chemical Society's Council voted to convert its Chemical Marketing Subdivision into a full-fledged division on marketing and economics, the first of its kind.

Fundamentals First: At first glance, it would appear that the ACS action is an encroachment on the sphere of interest already well covered by the Commercial Chemical Development and the Chemical Market Research Associations. But neither the CCDA nor the CMRA are raising any hackles. In fact, the head of the new ACS divi-

sion, Fred Soderberg, manager of General Dyestuffs' Industrial Division, is an ex-president of CCDA. He and his associates in the older group all feel that there is a definite need for the new organization. It will fill a spot which complements rather than competes with the work now being done.

Soderberg plans to shape his division around the individuals who, in the main, have only a fringe interest in marketing and economics *per se*. In general, the occupations of such men do not qualify them for membership in either the CMRA or CCDA, yet a knowledge of the fundamentals in these fields would be valuable in their work. To fill this need, the new ACS division will limit itself to the broader aspects of basic marketing principles, with the assumption that those individuals who require more detailed knowledge on techniques, etc., will coincidentally be able to transfer their allegiance to one of the other associations.

Sample Salesmanship: The Atlantic City meeting illustrated this approach. One full day was devoted to the



ACS' SODERBERG: Fundamentals for the fringe.

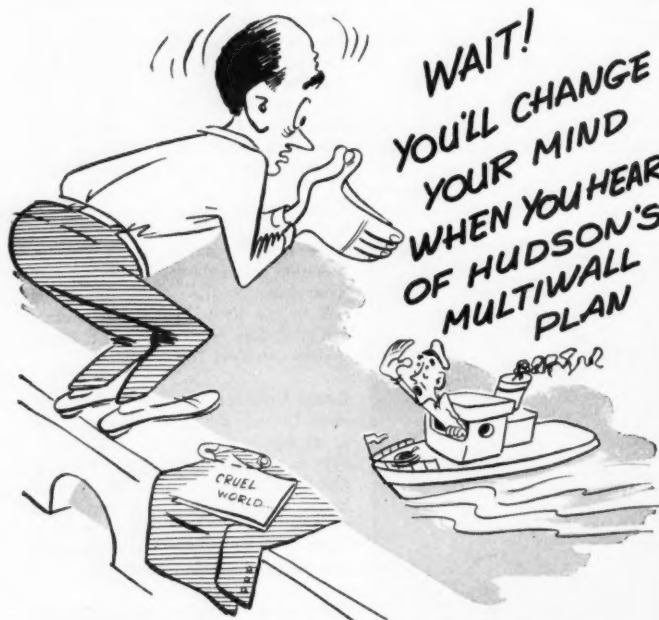
"Fundamentals of Chemical Marketing," a sort of primary course on selling. But more significant was the subject of the next day's talks: the use of samples as a selling tool. It is in this area, the sending and receiving of samples, that the salesman and the researcher have the greatest overlapping of interests.

On the transmittal end, the sampling stage is usually reached at the precise moment when a new product is halfway between the research laboratory and the sales department. The other side of the same coin—the receipt of the sample—also involves a close contact between the chemist and the visiting salesman. In both cases, an understanding of the other man's problems is essential for the full utilization of the sample itself.

Especially to the point was a talk by Jim Dudley, of the Carwin Co. His subject was the writing of literature to accompany the sample. "The mere submission of samples is not an open sesame to successful development," said Dudley. "A sample is a useless object as long as the container remains unopened on the laboratory shelf. It becomes a useful tool . . . only when a prospective user of the product is stimulated to carry out experimental work with it." An important stimulus is the data sheet which accompanies the sample—and this data sheet is usually prepared from information developed by the research laboratory of the company which sent the sample.

Starting from this basis, Dudley outlined the key ingredients of a successful data-sheet selling message. His research-chemist listeners could easily translate the information in terms of their own experiences.

Another mysterious door was opened by W. H. MacHale of Naugatuck.



You'll jump too—but for joy—when you get the big news from Hudson (manufacturers of multiwall sacks with assured delivery)!

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Dept. 121 505 Park Avenue, New York 22, N. Y.

DISTRIBUTION

He explained some of the reasoning used by advertising directors in their decisions on the amount and type of publicity to be given a sampling program. His words cast light on the puzzling inconsistencies noted by the development chemist: Some of his work would be given the full treatment while other results, just as significant, are hidden under a bushel.

"You don't advertise improvements if close competitive conditions exist," remarked MacHale. Competitors would rush to match claims, and the advantage would be lost. Instead, the cream of the market should be skimmed by personal contacts, making it difficult for the competing firms to sound out the latest development before the new product is firmly established where it counts.

On the other hand, if the product is different from anything on the market and its uses are largely unexplored, widespread publicity and extensive sampling are essential to its further development. The manufacturing company receives the full benefit of work done on the product by other firms' laboratories. Published results from the latter snowball the effect.

Engineers Too: Advertising was also covered on the AIChE program in Chicago. Neill Gilliatt, account ex-

ecutive with McCann-Erickson, Inc., chose "ingenuity" as the key word in describing a successful publicity campaign. He illustrated this facet by his own presentation: His talk began and ended with a tape-recorded "word from the sponsor"—a vigorous sales pitch on the values of advertising.

Dow Chemical's Don Ballman, who had a heavy speaking schedule—he was due for a talk in Atlantic City three days later—gave the chemical engineers a quick course in packaging and labeling chemicals. For cost-conscious engineers, he had an eye-opening preamble: 6%-8% of the total manufacturing costs may land up in the packaging column. And these expenses are difficult to cut without running into false economies. Loss claims and damage suits can easily nullify penny-foolish savings.

Other speakers talked on the problems met in the transportation of chemicals and on the techniques of selecting the proper sales channels. Here, as at Atlantic City, most of the listeners would rarely meet these problems in their own day-to-day work, but an understanding of the functions served by their salesmen associates would go far toward effecting the common goal of commercial success.

Growth Based on Trust

At the Pharmaceutical Council of Greater New York's fifth annual Drug Show held in Manhattan this week, one major drug manufacturer was conspicuously absent. Lederle Laboratories was again demonstrating its belief that selling ethical products calls for velvet-gloved subtlety.

The Drug Show was pitched at drug-store owners and pharmacists—not at the doctors. Lederle, on the other hand, believes in selling at the prescription-writing level.

In a fast-moving segment of the chemical process industry, Lederle is a fast-moving organization.* The drug industry's 1951 sales were over 40% higher than the previous year's, and a similar increase is expected for 1952.

Confidence Men: The key man in the Lederle selling effort is Director of Sales Henry Wendt. Appointed to handle the firm's distribution system when he was barely out of his thirties, Wendt is somewhat of a "wonder boy" himself in the field of "wonder drugs." But he is quick to point out that selling ethical drugs does not call for sales-

manship in the usual sense. Instead, he emphasizes that "trust and confidence" are the two essential elements of drug promotion and development.

Bringing such products to the level of national distribution calls for a



LEDERLE's WENDT: Confidence breeds confidence.

* The American Cyanamid division has just been awarded the 1952 Airfreight Trophy by Slick Airways for "outstanding contributions to the development of the airfreight industry."



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16-p. booklet of interest to electroplaters gives applications and data on chemical and physical properties of various fluoroborate concentrates. Write for "Baker & Adamson Metal Fluoroborate Solutions," General Chemical Division, Allied Chemical & Dye Corp., 40 Rector St., New York 6, N.Y.

Thiokol Liquid Polymer

4-p. bulletin describes Thiokol LP-2, a viscous liquid which converts to a tough, resilient, solvent-resistant rubber at room temperature. Properties and suggested applications are included. Thiokol Corp., 784 North Clinton Ave., Trenton, N.J.

Blanco

10-p. brochure entitled "Trouble Shooting With Blanco" describes use of Blanco concentrate powder in processing pulp and paper. Many uses are described. Antara Chemicals Division, General Dyestuff Corp., 435 Hudson St., New York 14, N.Y.

Rezyl Resin 50-5

4-p. pamphlet describes Rezyl Resin 50-5, used for nitrocellulose furniture lacquers. Properties and suggested formulations for the product are included. American Cyanamid Co., Coating Resins Division, 30 Rockefeller Plaza, New York 20, N.Y.

Case-Cote

4-p. brochure entitled "Stonite Case-Cote" discusses phenolic varnish developed specifically for use on steel cartridge cases. Other uses, properties, and thinning instructions are included. Stoner-Mudge Inc., 2000 Westhall St., Pittsburgh 33, Penna.

Equipment

Centrifugal Pumps

16-p. bulletin covering general-purpose centrifugal pumps of the cradle-mounted type; 5 basic cradle groups and 17 corresponding pump types, their capacities, horsepower ratings, and uses. Pump dimensions and a table of performance under 60-cycle use are included. Ingersoll-Rand Co.,

Department C.P., 11 Broadway, New York 4, N.Y. Request Form 7223.

Trucks and Cranes

8-p. booklet describes and illustrates line of industrial trucks and cranes. Featured is a section on how to choose the right fork truck for the right job. Specifications, construction and design features, and the latest attachments are listed. Request Catalog 54, The Baker-Rauland Co., Industrial Truck Division, 1230 West 80th St., Cleveland 2, O.

Dust Filter

16-p. booklet deals with all aspects of dust control with the Day "AC" dust filter. The Day Co., 817 3rd Ave. N.E., Minneapolis 13, Minn.

Kennison Nozzle

8-p. technical bulletin provides information including accuracy, construction, dimensions, installation and capacities of the Kennison nozzle. Request Technical Bulletin 135-J5, Builders-Providence Inc., 345 Harris Ave., Providence 1, R.I.

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